PB81-900107

GOVERNMENT REPORTS

Announcements & Index

7

March 27, 1981

U.S. Department of Commerce
National Technical
Information Service

NTIS

GOVERNMENT REPORTS

Announcements & Index

Published every two weeks by the National Technical Information Service (NTIS).
Annual subscription rates:

Government Reports Announcements & Index/North American Continent $275/All Others $375

Domestic priority mail and foreign air mail charges will be quoted on request. Make remittance payable to NTIS and mail to a U.S. Department of Commerce District Office or to NTIS, Springfield, VA 22161. Send change of address notice to NTIS.

ISSN 0097-9007

U.S. DEPARTMENT OF COMMERCE Philip M. Klutznick, Secretary of Commerce
NATIONAL TECHNICAL INFORMATION SERVICE Melvin S. Day, Director

COPYRIGHT WARNING

International Copyright © National Technical Information Service, 1980. All portions of this publication are protected against copying or other reproduction outside of the United States under the provisions of Article II of the Universal Copyright Convention. United States copyright is not asserted under the United States Copyright Law, Title 17, United States Code.

The Secretary of Commerce has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this department. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget through August 1, 1985

GOVERNMENT REPORTS

Announcements & Index

Volume 81, Number 7 March 27, 1981

CONTENTS

About NTIS & How To Order ii
How To Use iii
Subject Category and Subcategory Structure iv
NTIS Products v
Reports Announcements 1287
Keyword Index KW-1
Personal Author Index PA-1
Corporate Author Index CA-1
Contract/Grant Number Index CG-1
NTIS Order/Report Number Index OR-1
Price Codes ..... Outside Back Cover

NATIONAL TECHNICAL INFORMATION SERVICE (NTIS) KEY TELEPHONE NUMBERS

Business hours: Monday thru Friday, 7:45 am to 4:15 pm

INFORMATION ABOUT NTIS PRODUCTS & SERVICES	
Springfield Information Center	(703) 487-4600
District of Columbia Information Center and Bookstore	(202) 724-3382
Computer Products	(703) 487-4763
IDENTIFICATION OF A REPORT TITLE, NUMBER, PRICE OR NTIS AVAILABILITY (telephone answering machine)	(703) 487-4780
TO ORDER ANY NTIS PRODUCT OR SERVICE	
Springfield Order Desk (document or report)	(703) 487-4650
Springfield Pickup Desk	(703) 487-4604
Subscription Orders	(703) 487-4630
Telex	89 9405
Telecopier	(703) 321-8547
District of Columbia Bookstore	(202) 724-3382
Rush Handling Service (Virginia)	(703) 487-4700
Rush Handling Service (outside Virginia)	(800) 336-4700
QUESTIONS ABOUT YOUR ORDER OR DEPOSIT ACCOUNT	
Subscriptions	(703) 487-4630
Other enquiries	(703) 487-4660
Accounting	(703) 487-4770

ABOUT NTIS

The National Technical Information Service of the U.S. Department of Commerce is the central source for the public sale of Government-sponsored research, development, and engineering reports and other analyses prepared by Federal agencies, their contractors or grantees, or by Special Technology Groups. NTIS also is a central source for federally generated machine processable data files.

NTIS ships about 23,000 information products daily as one of the world's leading processors of specialty information. It supplies its customers with about 4 million documents and microforms annually. The NTIS information collection exceeds 1 million titles and all are available for sale. About 80,000 titles are stocked in multiple copies. Current lists of best selling reports describe those most in demand.

NTIS sells subscriptions, technical reports, and other information products and services of specialized interest under provisions of Title 15, U.S. Code 1151-7. This law, which establishes NTIS as a clearinghouse for scientific, technical, and engineering information, also directs NTIS to be self-supporting, to recover all its costs from the sales of products and services. All costs of NTIS products and services, including salaries, rent, utilities, marketing, promotion, and postage—and all the other usual costs of doing business—are paid from sales income, not by tax-supported Congressional appropriation.

Customers may quickly locate summaries of interest from among some 680,000 federally sponsored research reports completed and published from 1964 to date, using the agency's on-line computer search service (NTISearch) or more than 1,000 Published Searches. About 70,000 new summaries and reports are added annually.

The NTIS Bibliographic Data File (on magnetic tape) includes unpublished research summaries and is available for lease. The computer products of other Federal agencies also are sold or leased by NTIS.

Summaries of current research reports and other specialized information in various categories of interest are published in a wide variety of weekly abstract newsletters and indexed. An all-inclusive biweekly journal (Government Reports Announcements & Index) is published for librarians, technical information specialists, and those requiring all the summaries in a single volume.

A standing order microfiche service, Selected Research In Microfiche (SRIM), automatically provides subscribers with the full texts of research reports specially selected to satisfy individual requirements. Automatic distribution of paper copies also is available.

Additional services, such as the coordination, packaging, and marketing of unusual information for individuals and organizations may be specially designed.

These and many other information products and services are described in the free NTIS general catalog (PR-154).

HOW TO ORDER

Availability

NTIS announces reports supplied from many sources; copies of most items, but not all, are available from NTIS. Some reports must be obtained from other sources and those are noted.

In the Reports Announcements section (the first section of GRA&I), each bibliographic entry shows where the document may be obtained. NTIS shows such information in two places in its citations—a short, primary entry on the first line of the citation to the right of the NTIS order number, and a secondary entry that immediately precedes the abstract.

Reports available from NTIS have various price codes, actual prices, or the word "Subscription" printed in the primary availability statement. Reports not available from NTIS have the words "Not Available NTIS" printed there.

Not Available NTIS

To find where to order reports listed as "Not Available NTIS," look to the entry just before the abstract for the secondary availability statement. There are a variety of statements on availability varying from an entry that tells where the report was published to specific ordering instructions such as "Paper copy available from ERIC Document Reproduction Service." When NTIS can supply specific ordering instructions, it does so. However, when such information is not available to NTIS, contact your local librarian who may be able to help you.

Paper and Microfiche Copies

If the primary availability statement has a price code entry such as "PC AO4/MF AO1," you can place your order directly with NTIS. A report may be available in paper copy (PC) or microfiche (MF) or both; if both forms are available, price codes will be given for both PC and MF. To determine the current price, consult the price-code table printed on the outside back cover of the most current issue of GRA&I. Then, please use the order form bound into GRA&I, or a copy, to place your order. Be sure to include the NTIS order

number, the quantity, form, and the order fulfillment options you want—eg, magnetic tape mode.

Other Microforms and Subscriptions
If the report is offered on a subscription basis, or as 16 or 35mm microfilm, the secondary availability statement will so indicate. You may need to write or telephone NTIS for specific instructions on ordering such material; if you have any questions, please write or telephone for clarification (703-487-4630).

Order Fulfillment Options
NTIS offers three order fulfillment options; REGULAR, PREMIUM, and RUSH. If you need assistance with your order, NTIS offers an identification service for NTIS order numbers, prices, and availability. To expedite the identification service, a telephone answering device is used (703-487-4780). Your recorded questions are answered by mail the following working day.

Regular Service. Your order can be placed by mail, by telephone, or in person at one of our sales desks. Current U.S. Postal Service parcel post delivery time is from nine to 30 days. You can request delivery by first class mail (surcharge of $3 for each copy ordered to North American Continent addresses) or, if you are not a North American Continent customer, you may request foreign airmail (surcharge of $4 per copy ordered). You man elect to pick up at the NTIS Springfield sales desk (5285 Port Royal Road, Springfield, VA 22161, telephone (703-487-4650) or at the NTIS District of Columbia sales desk (Suite 620, 425 Thirteenth St., N.W., Washington,DC 20004, telephone 202-724-3382). If you elect personal pickup, the receptionist will call you when your order is ready.

Premium Service. This service is available only to NTIS Deposit Account customers. This service uses first class mail delivery (rather than fourth class) to expedite delivery. The surcharge is $3.50 for each copy ordered; for example, if you order three copies of one report or one copy each of three reports, the surcharge in either case would be $10.50. All Deposit Account customers receive a Premium Service ID number that they can use to place telephone orders, using a Western Union 24-hour toll-free number.

Rush Handling. NTIS fills these orders within eight working hours of receipt; no mail orders for rush handling are accepted. Your order can be placed using NTIS's toll-free number (800-336-4700), or by telegram, by Telex (89-9405), by Telecopier (703-321-8547); or in person at one of NTIS's sales desks. Orders for mail delivery (by First Class Special Delivery) are accepted only from customers having NTIS Deposit Accounts, American Express, Master Card, or Visa accounts; the surcharge is $10 for each copy ordered. If the order is for personal pickup at one of NTIS's sales desks, the surcharge is $6 for each copy ordered. This service guarantees that your order receives immediate validation, verification of availability, and individual hand processing through inventory control and the warehouse, and priority printing if reproduction from film is required.

Ordering From Outside the U.S. To better serve overseas clients NTIS has more than 30 organizations around the world which provide local access to NTIS products and services. These agencies are equiped to handle all inquiries concerning services provided by NTIS. For a list of these agencies, please refer to the inside back cover.

HOW TO USE GOVERNMENT REPORTS ANNOUNCEMENTS & INDEXES

NTIS®

Arrangement Of Citations
Bibliographic entries in this journal are arranged by COSATI* classification. This scheme uses 22 broad subject categories which are further separated into 178 subcategories. A bibliographic record is listed in one subcategory only. There are no cross references except in the indexes. Within a subcategory, entries are listed alphanumerically by the NTIS order number.

Access Points
There are several ways to determine where a particular topic or citation is in GRA&I. The titles of the broad subject categories are listed on the back cover with an edge index to the journal location. Also, subject category and subcategory titles are used as running heads on each page of the Reports Announcement section of the journal. Specific citations can be located by searching the indexes by keyword, personal author name, corporate author name, contract number, grant number, report number or NTIS order number. The page number of the main entry in the Reports Announcement section is given with each index entry.

* Committee on Scientific and Technical Information

NTIS SUBJECT CATEGORY AND SUBCATEGORY STRUCTURE

NTIS®

You can use the Edge Index on the outside back cover to locate the beginning of each category within the Reports Announcements section.

Category 1. Aeronautics

Subcategories: Aerodynamics; Aeronatuics; Aircraft; Aircraft Flight Control and Instrumentation; Air Facilities.

Category 2. Agriculture

Subcategories:Agricultural Chemistry; Agricultural Economics; Agricultural Engineering; Agronomy and Horticulture; Animal Husbandry; Forestry.

Category 3. Astronomy and Astrophysics

Subcategories: Astronomy; Astrophysics; Celestial Mechanics.

Category 4. Atmoshpheric Sciences

Subcategories: Atmospheric Physics; Meteorology.

Category 5. Behavioral and Social Sciences

Subcategories: Administration and Management; Documentation and Information Technology; Economics; History, Law and Political Science; Human Factors Engineering; Humanities; Linguistics; Man-machine Relations; Personnel Selection, Training and Evaluation; Psychology (Individual and Group Behavior); Sociology.

Category 6. Biological and Medical Sciences

Subcategories: Biochemistry; Bioengineering; Biology; Bionics; Clinical Medicine; Environmental Biology; Escape, Rescue, and Survival; Food, Hygiene, and Sanitiation; Industrial (Occupational) Medicine; Life Support; Medical and Hospital Equipment; Microbiology; Personnel Selection and Maintenance (Medical); Pharmacology; Physiology; Protective Equipment; Radiobiology; Stress Physiology; Toxicology; Weapon Effects.

Category 7. Chemistry

Subcategories: Chemical Engineering; Inorganic Chemistry; Organic Chemistry; Physical Chemistry, Radio and Radiation Chemistry.

Category 8. Earth Sciences and Oceanography

Subcategories: Biological Oceanography; Cartography; Dynamic Oceanography; Geochemistry; Geodesy; Geography; Geology and Mineralogy; Hydrology and Limnology; Mining Engineering; Physical Oceanography; Seismology; Snow, Ice, and Permafrost; Soil Mechanics; Terrestrial Magnetism.

Category 9. Electronics and Electrical Engineering

Subcategories: Components; Computer; Electronic and Electrical Engineering; Information Theory; Subsystems; and Telemetry.

Category 10. Energy Conversion (Non-propulsive)

Subcategories: Conversion Techniques; Power Sources; Energy Storage.

Category 11. Materials

Subcategories: Adhesives and Seals; Ceramics, Refractories,and Glasses; Coatings, Colorants, and Finishes; Composite Materials; Fibers and Textiles; Metallurgy and Metallography; Miscellaneous Materials; Oils, Lubricants, and Hydraulic Fluids; Plastics; Rubbers; Solvents, Cleaners, and Abrasives; Wood and Paper Products.

Category 12. Mathematical Sciences

Subcategories: Mathemaiics and Statistics; Operations Research.

Category 13. Mechanical, Industrial, Civil, and Marine Engineering

Subcategories: Air Conditioning, Heating, Lighting, and Ventilation; Civil Engineering; Construction Equipment, Materials, and Supplies; Containers and Packaging; Couplings, Fittings, Fasteners, and Joints; Ground Transportation Equipment; Hydraulic and Pneumatic Equipment; industrial Processes; Machinery and Tools; Marine Engineering; Pumps, Filters, Pipes, Fittings, Tubing, and Valves; Safety Engineering; Structural Engineering.

Category 14. Methods and Equipment

Subcategories: Cost Effectiveness; Laboratories, Test Facilities, and Test Equipment; Recording Devices; Reliability; Reprography.

Category 15. Military Sciences

Subcategories: Antisubmarine Warfare; Chemical, Biological, and Radiological Warfare; Defense; Intelligence; Logistics; Nuclear Warfare; Operations, Strategy, and Tactics.

Category 16. Missile Technology

Subcategories: Missile Launching and Ground Support; Missile Trajectories; Missile Warheads and Fuses; Missiles

Category 17. Navigation, Communications, Detection, and Countermeasures

Subcategories: Acoustic Detection; Communications; Direction Finding; Electromagnetic and Acoustic Countermeasures; Infrared and Ultraviolet Detection; Magnetic Detection; Navigation and Guidance; Optical Detection; Radar Detection; Seismic Detection.

Category 18. Nuclear Science and Technology

Subcategories: Fusion Devices (Thermonuclear); Isotopes; Nuclear Explosions; Nuclear Instrumentation; Nuclear Power Plants; Radiation Shielding and Protection; Radioactive Wastes and Fission Products; Radioactivity; Reactor Engineering and Operation; Reactor Materials; Reactor Physics; Reactors (Power); Reactors (Non-power); SNAP Technology.

Category 19. Ordnance

Subcategories: Ammunition, Explosives, and Pyrotechnics; Bombs; Combat Vehicles; Explosions, Ballistics, and Armor; Fire Control and Bombing Systems; Guns; Rockets; Underwater Ordnance.

Category 20. Physics

Subcategories: Acoustics; Crystallography; Electricity and Magnetism; Fluid Mechanics; Masers and Lasers; Optics; Particle Accelerators; Particle Physics; Plasma Physics; Quantum Theory; Solid Mechanics; Solid-state Physics; Thermodynamics; Wave Propagation.

Category 21. Propulsion and Fuels

Subcategories: Air-breathing Engines; Combustion and Ignition; Electric Propulsion; Fuels; Jet and Gas Turbine Engines; Nuclear Propulsion; Reciprocating Engines; Rocket Motors and Engines; Rocket Propellants.

Category 22. Space Technology

Subcategories: Astronautics; Spacecraft; Spacecraft Trajectories and Reentry; Spacecraft Launch Vehicles and Ground Support.

This categorization scheme is the one endorsed in 1964 by the Committee on Scientific & Technical Information (Cosati) of the Federal Council for Science & Technology. A booklet describing these categories is available from NTIS; the NTIS order number is AD-612 200, the price codes are PC AO4/MF AO1.

ABOUT ABSTRACT NEWSLETTERS

Abstract Newsletters announce in 27 subject categories summaries of most unclassified federally funded research as it is completed and made available to the public. Abstracts of reports appear in as many categories as appropriate, and do so within a few weeks of their receipt from the originating agencies. Generally, the technical report summaries have been prepared by the author. The final issue of the year is a subject index containing up to 10 subject postings and an NTIS Order/Report Number index. The titles of newsletters available on subscription are:

- Administration & Management
- Agriculture & Food
- Behavior & Society
- Biomedical Technology & Human Factors Engineering
- Building Industry Technology
- Business & Economics
- Chemistry
- Civil Engineering
- Communication
- Computers, Control, & Information Theory
- Electrotechnology
- Energy
- Environmental Pollution & Control
- Government Inventions for Licensing
- Health Planning & Health Services Research
- Industrial & Mechanical Engineering
- Information for Innovators (biweekly)
- Library & Information Sciences
- Materials Sciences
- Medicine & Biology
- NASA Earth Resources Survey Program (monthly)
- Natural Resources & Earth Sciences
- Ocean Technology & Engineering
- Physics
- Problem-Solving Information for State & Local Governments
- Transportation
- Urban & Regional Technology & Development

All are weekly publications except where noted. For a price list and sample copies please write to Subscriptions, NTIS, Springfield, VA 22161.

ABOUT SRIM

SRIM (Selected Research in Microfiche) is an automatic biweekly service available from NTIS to help you expand your coverage of U.S. Government research and development at a cost within reach of a modest information budget. You limit your expense by receiving complete research reports (not just abstracts) in microfiche, but only in the subject areas you select. You get the reports in microfiche without having to track down a specific report and order it. For full control of your SRIM collection, you can order the quarterly index service (cumulated annually). For further details, telephone SRIM information (703) 487-4640 or write to NTIS.

ABOUT PUBLISHED SEARCHES

Published Searches are bibliographies with abstracts prepared from the NTIS Bibliographic Data File of more than 680,000 reports, in anticipation of users' needs. Ask NTIS for a listing of Published Searches by requesting NTIS-PR-186. If your needs are more specialized and you want a custom online search, please call (703) 487-4642.

ABOUT PRODUCT FORMATS

Products listed in GRA&I are available in a variety of formats.
Paper copy (PC)—copies or reprints of the original report.
Microfiche (MF) - 105 x 148.57mm microfiche sheets (about 4 x 6 inches), 24X.
Microfilm - 16mm
Microfilm - 35mm
Magnetic tape - 7 - or 9-track recording modes

REPORTS ANNOUNCEMENTS

NTIS®

The full bibliographic report entries in this section are arranged by subject category and subcategory. Within each subcategory the reports are arranged alphanumerically by NTIS order number; the Ebcdic character set sort is used.

SAMPLE ENTRY

Field 12—MATHEMATICAL SCIENCES
Group 12A—Mathematics and Statistics
PB80-104045 PC **A03**/MF **A01**
Massachusetts Inst. of Tech., Cambridge. Constructed Facilities Div.
Computation of Hankel Transforms Using the Fast-Fourier Transform Algorithm,
E. Kausel, and G. Bouckovalas. Aug 79, 49p
R79-12, NSF/RA-79-12, NSF/RA-790206
Grant NSF-ENV77-18339

An efficient numerical procedure is presented for the computation of Hankel Transforms. The algorithm is based on the expression of the Hankel Transform in terms of a two-dimensional Fourier Transform, which is then reduced to only one dimension. The latter is then evaluated with the Fast Fourier Transform algorithm. Examples are presented, and a listing of the computer program included.

NTIS Subject Category
NTIS Subcateogry
NTIS order number Availability/Price codes
Corporate or Performing Organization

Report title

Personal authors Report date Page count
Report number(s)
Contract or grant number(s)

Abstract

1. AERONAUTICS

1B. Aeronautics

AD-A092 193/2 PC **A04**/MF **A01**
Naval Training Equipment Center, Orlando, FL.
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
Final rept.
Charles E. Kaul, Stanley C. Collyer, and Gavan Lintern. Oct 80, 62p Rept no. NAVTRAEQUIPC-IH-322

Two techniques for providing descent rate information to pilots making carrier landings were evaluated and shown to be effective in a flight simulator. Landing performance of experienced Naval aviators was tested in the Visual Technology Research Simulator, with a conventional Fresnel Lens Optical Landing System (FLOLS) and with a simple modification to the FLOLS to include variable length vertical light arrays, or arrows. The FLOLS, which is used for glideslope guidance during carrier approaches, provides zero-order or displacement information for the pilot to judge whether he is above or below the glideslope. Aircraft system dynamics can create substantial lags between an incorrect control input and the resulting error indication from the FLOLS. The techniques that were evaluated compensated for that lag by providing first-order or rate information to the pilot. The two techniques involved different first-order drive algorithms. One system, designated the RATE display, showed the difference between the aircraft's actual descent rate and the descent rate that would maintain its present glideslope angle with respect to the FLOLS. The other, designated the COMMAND display, showed the magnitude of descent rate correction needed, and indicated a no-error condition when the pilot was tracking the glideslope or returning to it at an appropriate rate of closure.

AD-A092 443/1 PC **A09**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
Doctoral thesis,

Jeffrey Edward Schofield. 1980, 181p Rept no. AFIT-CI-80-30D

Improving the safety of complex human-machine systems is a continuing challenge. Available information concerning system failures, which are usually called accidents, incidents, or mishaps, regularly points to human operators as the 'brittle elements.' The need for greater understanding of operator behavior is recognized in a variety of technologically sophisticated system, for example, industrial processes, health care, public utilities, and national defense; but nowhere is it more obvious than in the aftermath of a commerical airline accident. Following the November 1979 crash of an Air New Zealand DC-10 which killed 257 people in Antarctica, United Press International noted that the ten worst disasters in aviation history have all occurred since October 1972. Although the degree of operator culpability varies, the fact that the five deadliest accidents have occurred since March 1974 is particularly significant. At least one commercial airliner was completely destroyed, and over 200 people were killed in each of the five crashes. Wide-body jetliners, either Boeing 747 or McDonnell Douglas DC-10 aircraft, were involved in each instance. The sheer size of such vehicles portends grave consequences in case of system failure, be it human, mechanical, or a combination of the two.

AD-A092 459/7 PC **A04**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
The Effects of the Direction of Control Loading on a One-Dimensional Tracking Task.
James Michael Carlin. Mar 80, 71p Rept no. AFIT-CI-80-10T

Modern fighter aircraft flight controls are activated by the pilot through a joystick. Because of heavy loads on the control surfaces, the flight controls are finally actuated by powerful hydraulic actuators. Artificial feel systems of varying complexity are utilized to give some feedback to the pilot to aid in control. Regardless of the system, virtually all are equipped with thumb-actuated pitch and roll trim. This feature allows the pilot to quickly and easily change the fore and aft or lateral stick force required to control the pitch and roll of the aircraft. During precise tracking tasks such as flying close formation maneuvers, or tracking an air or ground target in an aiming device, many pilots desire to trim the stick forward. A smaller proportion constantly strive for zero pressure in a precise tracking situation. Virtually none trim aft stick pressure in this environment. This study is strictly concerned with uni-directional control loading. (Author)

1C. Aircraft

AD-A091 891/2 PC **A03**/MF **A01**
Royal Aircraft Establishment, Farnborough (England).
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
Technical rept.,
P. J. Butterworth. Sep 79, 42p RAE-TR-79120, DRIC-BR-72779

In a low-speed wind tunnel measurements have been taken of the velocity vector in the flow field behind the wing of a combat aircraft model. The wing was fitted with a leading-edge root extension (strake) and could have either a plain leading edge or a deployed slat outboard. Four flow investigations were made; at three angles of incidence with the plain leading edge and at one angle of incidence with the slat deployed. The data from each of these tests have been analysed to give the distribution of the total head deficit, the streamwise component of vorticity and a measure of the circulation distribution in the wake of the wing. (Author)

AD-A091 906/8 PC **A04**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Aviation and Surface Effects Dept.
P-3 Orion Fuel-Saving Modification Wind Tunnel Study,
Andrew G. Lee. Jun 80, 69p Rept no. DTNSRDC/ASED-80/14

A joint investigation was conducted on the potential drag reduction of the P-3 Orion aircraft through various modifications to the engine nacelles. A 1/16-scale model was used in the 7- by 10-foot transonic wind tunnel experiments conducted over an angle of attack range of -4 to 7 deg. Force data were taken on 14 different model configurations with all modifications in the engine nacelle areas. The experiments were conducted as part of the P-3 Fuel-Saving Modifications Program. (Author)

AD-A091 915/9 PC **A02**/MF **A01**
Royal Aircraft Establishment, Farnborough (England).
Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938,
S. A. Thornton. May 79, 12p RAE-LIBRARY BIB-371, DRIC-BR-75868

No abstract available.

AD-A091 938/1 PC **A03**/MF **A01**
Federal Aviation Administration, Washington, DC. Office of Aviation Safety.
Summary of Aviation Safety Program Resumes. Cabin Safety.
Special rept.,
J. R. Harrison. Oct 80, 27p Rept no. FAA-ASF-803

This report contains a Program Activity Resume and a Project Details listing of those activities supporting the FAA Cabin Safety Program. The Cabin Safety Activity Resume identifies three sub-programs relating to Inflight, Crashworthiness, and Post Crash safety activities. The sub-programs are identified and reported in the Project Details listing which includes: Inflight Fire, Operational Hazards, Training & Duties, Crash Scenario Definition, Structural Load Analysis, Crashworthy Fuel Tanks, Fuel Fire Hazard, Cabin Interior Materials, Crew Considerations, Crash Rescue, SAFER Advisory Committee and Evacuation Systems.

AD-A091 943/1 PC **A05**/MF **A01**
Systems and Applied Sciences Corp., Riverdale, MD.
A Survey of Computer Simulations of Digital Avionics Systems.
Final rept. 1 Jul 79-1 Feb 80,
James Watson, J. Davis, and R. Satterfield. Sep 80, 82p AFWAL-TR-80-1057
Contract F33615-79-C-1870

Three simulation systems (GCSS, DSDS, and DAS/DDPM) can meet AFWAL's requirements for flexible, all-software, engineering tool. All factors considered, GCSS can meet those needs best for the short-term, and in so doing, serve as a test vehicle for better definition of AFAL's long-term requirements. (Author)

AD-A091 962/1 PC **A02**/MF **A01**
Aeronautical Research Labs., Melbourne (Australia).
Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
Technical memo.,
B. C. Hoskin, and A. A. Baker. Jul 80, 18p Rept no. ARL/STRUC-TM-321

Strains have been measured in a Mirage wing with an eight-layer boron fibre reinforced plastic (BFRP) patch fitted in the region of a fuel drain hole, during a series of ground calibration loadings. The point of these measurements was to determine whether the patch caused any significant, and potentially deleterious, changes in the strains in the main spar. It was concluded that no deleterious changes occurred. (Author)

AD-A092 147/8 PC **A03**/MF **A01**
General Research Corp., McLean, VA. Operations Analysis Div.
The SOTAS-Scout-AAH/HELLFIRE System.
Final rept. Nov-Dec 76,
James B. Campbell. Jan 77, 36p Rept no. GRC-OAD-CR-178
Contract DAAG39-77-M-0487

The increased performance capability and associated change in survivability resulting from the increase in performance was investigated for scout type helicopters. Three terrains, coded for the computer, were used in the study. Scout helicopters were employed to search, identify and designate targets for an Advanced Attack Helicopter with HELLFIRE missiles. The scout helicopter performance was investigated at different altitudes for several single and multiple pop-up positions in each terrain. (Author)

AD-A092 257/5 PC **A07**/MF **A01**
Grumman Aerospace Corp., Bethpage, NY.
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
Final rept.,
Richard R. Chipman, and Edward J. Laurie. May 80, 131p Rept no. ADCR-80-1
Contract N00019-79-C-0062

A gradient-directed numerical search technique is presented for determining those configurations of multiple external stores that are most flutter-critical for a given aircraft. The search is performed in a design space defined by the store properties at each specified store location. Constraints on the space are imposed by the extent of the aircraft store inventory. From expressions for the derivatives of flutter speed with respect to the store properties, gradient directions in the space are computed to guide the search. The search technique used is called Rank One Correct and belongs to the class of quadratically convergent search algorithms. To demonstrate the technique on a realistic problem, the A-6E aircraft and its extensive store inventory were analyzed. Searches of the inventory singled out two potentially critical configurations that gave flutter speeds well within the flight envelope for low assumed values of structural damping. Comparisons with the results of previous A-6 studies (which did not identify these configurations as critical) were made and possible explanations for the apparent anomaly were explored. It was concluded that, if these configurations had been uncovered during aircraft design, they would have been flagged for flight flutter test. Their omission is evidence of the extreme difficulty and poor reliability of current practice. The new method offers an efficient alternative to current practices for determining potentially flutter-critical store combinations from the many thousands (or even millions) of store loadings that can occur on modern attack aircraft.

AD-A092 292/2 PC **A06**/MF **A01**
Naval Air Development Center, Warminster, PA. Aircraft and Crew Systems Technology Directorate.
Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
Phase rept.,
Thomas J. Zenobi, and William C. Ward. Nov 80, 105p Rept no. NADC-80208-60

Navy has undertaken an effort to utilize an ejection seat structure composed of aluminum honeycomb sandwich composite material. This report documents the design, fabrication procedures and acceptance testing of the seat structure. Due to higher fabrication costs, tradeoffs between strength, weight, and cost will have to be addressed. (Author)

AD-A092 414/2 MF **A01**
Federal Aviation Administration, Washington, DC. Office of Management Systems.
Census of U.S. Civil Aircraft, Calendar Year 1978.
Annual rept.
31 Dec 79, 379p
Availability: Superintendent of Documents, GPO, Washington, DC 20402 HC $8.50. Microfiche furnished to DTIC (and NTIS) users.

This report covers statistical data, including General Aviation, Air Carrier, detailed computer printouts for aircraft, and a Glossary of the terms used in this publication.

AD-A092 437/3 PC **A23**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
A Feasibility Study for Advanced Technology Integration for General Aviation.
Final rept.,
Garey T. Matsuyama. May 80, 538p Rept no. AFIT-CI-80-22D
Doctoral thesis.

A study directed toward the identification and evaluation of applicable advanced technologies for general aviation was performed. An extensive data base was generated through visits to 31 general aviation manufacturers and 3 NASA research centers as well as through an exhaustive literature search. An evaluation technique was developed which allowed candidate technologies to be ranked according to potential benefit. Finally, design studies were performed for a 6-passenger personal/business airplane and a 19-passenger commuter airplane. The General Aviation Synthesis Program (GASP) was utilized during the design studies for propulsion system and vehicle sizing as well as mission performance analysis.

AD-B007 465/8 PC **A09**/MF **A01**
General Dynamics/Fort Worth Tex Fort Worth Div
Advanced Metallic Air Vehicle Structure Program.
Interim rept. no. 4, 16 Jun-15 Dec 74,
C. E. Hart, R. C. Bissell, E. J. Bilhartz, D. Clayton, and E. F. Cox. Jun 75, 193p AFFDL-TR-75-40
Contract F33615-73-C-3001
Distribution limitation now removed.

This report covers the manufacture of the wing carrythrough structure and the test fixture structure during the latter portion of Phase III, Fabrication. Included are design and analysis in support of manufacture and additional material testing, component testing and manufacturing research and development work funded as a part of the Credible Option added task. All detail parts and subassemblies for the wing carrythrough structure (WCTS) are complete. Final assembly of the WCTS is progressing on schedule toward a 31 January 1975 completion date. After final assembly of the WCTS the remaining strain gages will be installed and the dummy wing will be prefit prior to shipment to AFFDL/FBT at WPAFB. Manufacture of all elements of the test fixture is substantially complete. The test fixture base is reassembled at WPAFB. The forward upper test fixture structure is at AFFDL/FBT at WPAFB being reassembled. The aft upper test fixture structure is being disassembled at Fort Worth in preparation for an early January 1975 delivery to WPAFB. The Advanced Metallic Air Vehicle Structure (AMAVS) Program is progressing on schedule toward a May 1975 start of testing in the Structural Test Facility at WPAFB. Fifteen months of static, fatigue and damage tolerance testing are planned. (Author)

AD-B008 124/0 PC **A09**/MF **A01**
Science Applications, Inc., El Segundo, CA.
Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
Final rept. Jun 74-Jun 75,
R. M. Traci, E. D. Albano, and J. L. Farr, Jr. Aug 75, 179p SAI-76-543-LA, AFFDL-TR-75-100
Contract F33615-74-C-3094
Distribution limitation now removed.

A theory and numerical solution method are presented for the problem of two or three dimensional flow about thin wings undergoing harmonic oscillations. The theory is based on a treatment of the unsteady flow as a small perturbation on the nonlinear steady flow. The coupled governing equations for the steady and unsteady perturbation potentials are of mixed elliptic/hyperbolic type and are solved using the mixed differencing line relaxation techniques of Murman and Cole. The theory and solution method have been generalized to treat subsonic or supersonic freestream flows, solid or porous wall effects and three dimensional flow about planar wings. Calculations demonstrating each of these capabilities are presented. Accuracy of the method for realistic steady and unsteady flows is examined by comparison to more exact numerical results and experimental data. The comparison indicates that the present method provides a useful and efficient inviscid solution. Quantitative differences between the present results and experimental data are attributed primarily to viscous effects, pointing out the importance of such effects for transonic flows.

AD-B044 225/1 PC **A05**/MF **A01**
National Aviation Facilities Experimental Center, Atlantic City, NJ.
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
Final rept. May 77-Jun 78,
Paul N. Boris, Roger S. Young, and Robert A. Filipczak. Oct 79, 100p FAA-NA-78-47, AFAPL-TR-79-2036
Contract F33615-75-M-6251
Distribution limitation now removed.

A four-phase test program was conducted using Halons 1011 (CB), 1211, 1301, and Halon Foam to determine which of the latter three would be a suitable replacement for 1011. The four phases consisted of determining agent concentraton in fixed volumes under quiescent and ventilated conditions; agent decomposition products analysis under these same conditions, but with a four pound cotton fire load; agent throw range; and agent effective range against class A and B fires. Within the constraints of this program, 1211 was the most effective agent during effective range testing and 1011 the least effective. (Author)

AD-879 736/7 PC **A08**/MF **A01**
Aeronautical Research Associates of Princeton, Inc., NJ.
Design Manual for Vertical Gusts Based on Power Spectral Techniques.
Final rept. 2 Jan 69-1 Jul 70,
John C. Houbolt. Dec 70, 152p ARAP-147, AFFDL-TR-70-106
Contract F33615-69-C-1272
Distribution limitation now removed.

Recommended procedures, based on power spectral methods, are given for the design of aircraft for vertical atmospheric turbulence encounter. Four procedures are outlined. The first is a direct preliminary design type, based on specified rigid body results. The second is more detailed and makes use of composite response values, computed either from the rigid body results, or by specific frequency response analysis. A third procedure is based on comparison with a previous successful design. In the fourth procedure specific loads exceedance curves are derived in accordance with assumed missions. Recommended gust intensity values, proportion of time in turbulence, and scale values are given. For ease in application, detailed step-by-step procedures are listed throughout the manual. The philosophy and basis for deriving the recommended design values are reviewed in part. Special sections are included throughout which summarize the basic equations that apply to gust analysis, give the means for treating structural interaction effects, and show how the problem of nonuniform spanwise gusts is treated. Appendices are included which give useful conversion and data charts, and which review various means for establishing the frequency response function. (Author)

AD-886 531/3 PC **A05**/MF **A01**
General Dynamics, San Diego, CA. Convair Aerospace Div.
High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
Final rept. 1 Jul 70-30 Apr 71,
Hideo Yoshihara, Demetrious Zonars, and Wilbert Carter. Jun 71, 81p AFFDL-TR-71-61
Contract F33615-70-C-1654
Distribution limitation now removed.

For improved transonic cruise and maneuver performance, airfoil profiles were designed incorporating simultaneously, a 'peaky' nose, an aft camber, an aft upper surface humping, as well as jet flaps for the maneuver conditions. Three profiles were evolved and were tested in the NAE two dimensional transonic wind tunnel at high Reynolds numbers. The Basic Airfoil incorporated an aft camber and jet flaps, and was tested extensively in an earlier test carried out jointly with the NAE. Airfoil A had a peaky nose, aft camber, a moderate humping, and jet flaps, while the third profile, Airfoil B, was a non-blowing model with significant upper surface humping for use at the higher loadings. The results indicated that the Basic Airfoil, with or without blowing had the best overall performance, while without blowing Airfoil B had the best high M maneuver performance.

AD-904 089/0 PC **A14**/MF **A01**
Boeing Vertol Co., Philadelphia, PA.
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
Final rept. Feb 71-Feb 72,
H. R. Alexander, A. K. Amos, F. J. Tarzanin , and R. B. Taylor. Sep 72, 323p D210-10464-2, AFFDL-TR-72-40-Vol-2
Contract F33615-71-C-1310
Distribution limitation now removed.

The blade loads analysis calculates rotor blade flapwise, chordwise, and torsional deflections and loads, together with rotor performance, control system forces, and vibratory hub loads. Articulated and hingeless rotors with 2 to 9 blades and large twist may be analyzed. The analysis considers coupled flapwise-chordwise-torsion deflections of the rotor blades. Boundary conditions for either articulated or hingeless rotors are applied and the solution is obtained by expanding the variables in a 10-harmonic Fourier series. Airload calculations include the effects of airfoil section geometry, compressibility, stall, 3-dimensional flow, unsteady aerodynamics, and nonuniform inflow. In the area of rotor loads, correlation of prop/rotor and helicopter rotor loads test data has been made with the fully coupled rotor loads and steady in-plane hub moments for prop/rotors and for alternating blade loads, pitch link loads, and airloads for helicopters. An unexpected discovery of this study was the sensitivity of the rotor derivatives to blade lead-lag motion when the frequency of this mode is near 1 per rev. This result was subsequently confirmed by test. The impact of the new prediction capabilities and possible refinement or development of design criteria through use of the analysis are discussed. The methods contained in this report are intended to be used by designers to calculate with improved accuracy, the dynamic and aeroelastic response characteristics of rotor powered V/STOL aircraft. The essential new feature of these methods is that the coupled flap-pitch-lag blade deflections are taken into account. These calculations are essential if a high level of confidence is to be had in the results. (Author)

AD-908 244/7 PC **A07**/MF **A01**
Boeing Vertol Co., Philadelphia, PA.
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
Final rept. Feb 71-Feb 72,
H. R. Alexander, and P. F. Leone. Jan 73, 133p D210-10464-1, AFFDL-TR-72-40-Vol-1
Contract F33615-71-C-1310
See also Volume 2, AD-904 089L.
Distribution limitation now removed.

The aeroelastic phenomena associated with prop/rotor systems are discussed and classified. It is concluded that an acceptable technology exists in several areas, including wing/rotor divergence, whirl flutter, aeromechanical instability, and air and ground resonance. The technology is less successful in those areas where the flow through the rotor is significantly nonaxial, e.g., tilt-rotor transition regime and high-speed helicopter flight; also when forms of intermodal blade coupling exist due to finite deflections of the blades. It is believed that, in addition to collective deflections, finite cyclical deflections of the blades produce destabilizing coupling effects in some cases. Significantly large edgewise flow in combination with nonzero blade steady-state deflections is also seen to be destabilizing. A minimum-complexity methodology which may be expected to correlate with currently identified phenomena is defined. (Author)

PATENT-4 227 856 Not available NTIS
Department of the Navy, Washington, DC.
Reverse Velocity Rotor System for Rotorcraft.
Patent,
Thomas D. Verrill, and John R. Ewans. Filed 12 Jul 78, patented 14 Oct 80, 7p AD-D007 874/1, PAT-APPL-924 101
Supersedes PAT-APPL-924 101-78, AD-D005 373.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for for-

eign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

A blade control method and means for helicopter rotors which increases helicopter speed by mixing two/rev. control motion with one/rev. cyclic and collective motion through mechanical summation is provided. Both rotary and vertical motions are imparted to an inner control shaft and these motions are combined to impart vertical oscillatory motions to the rotor head which motions increase the thrust developed by the helicopter rotor. (Author)

PB81-850596 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Sailplanes. January, 1972-March, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Mar 80,
Howard L. Ogushwitz. Oct 80, 125p
NERACIAANT1766
Sponsored by National Technical Information Service, Springfield, VA.

These citations cover the theory and design of sailplanes. Standard gliders, ultralight gliders, and instrumentation are also discussed. (Contains 200 citations.)

PB81-850604 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Sailplanes. January, 1970-July, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Jul 80,
Howard L. Ogushwitz. Oct 80, 42p NERACEI NT1766
Sponsored by National Technical Information Service, Springfield, VA.

These citations cover the theory and design of sailplanes. Standard gliders, ultralight gliders, and instrumentation are also discussed. (Contains 37 citations.)

PB81-850612 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Sailplanes. January, 1970-March, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Mar 80,
Howard L. Ogushwitz. Oct 80, 95p
NERACUSGNT1766
Sponsored by National Technical Information Service, Springfield, VA.

These citations cover the theory and design of sailplanes. Standard gliders, ultralight gliders, and instrumentation are also discussed. (Contains 85 citations.)

PB81-855058 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Computer Simulation of Aircraft. July, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jul 70-Jun 80,
Howard L. Ogushwitz. Jul 80, 196p NERACEI NT0233
Sponsored by National Technical Information Service, Springfield, VA.

These citations contain the design and mathematical modeling of aircraft components, avionics, maintenance, and missions, using computers. (Contains 192 citations.)

1D. Aircraft Flight Control and Instrumentation

AD-B004 191/3 PC **A10**/MF **A01**
Hughes Aircraft Co., Culver City, CA. Display Systems Dept.
Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
Final rept. 21 May 73-21 Feb 74,
J. L. Heard, and E. W. Opittek. Aug 74, 208p
HAC-P74-59R-Vol-1, AFAL-TR-74-130-Vol-1
Contract F33615-73-C-1267
See also Volume 2, AD-B004 192L.
Distribution limitation now removed.

A study of the requirements for and the design of a Modular Multi Sensor Display System was conducted. The purpose of the study was to perform the functional design of core and special module, that, when integrated together, perform the digital scan conversion, digital symbol generation, and display functions of multiple Air Force Avionics Systems. Specifically, the requirements were derived from the avionics sensor systems aboard F-4, A-7, F-106, F-111 and B-1 type aircraft. An analysis was also performed to insure that the design was compatible with the spatial resolution, dynamic range and temporal response of the human operator. The design study resulted in the definition of 20 core modules with universal system applicability and six special modules to perform specific interface and special mode functions. The resulting design was partitioned onto both lsi modules and discrete msi printed circuit card modules. A programmable controller was designed to allow simple modification and growth for both the scan converter and symbol generator. A tradeoff analysis was conducted to compare the modular design with existing analog techniques and with a discrete digital design to meet the specific display system requirements of the A-7 aircraft. Physical characteristics, cost of ownership, reliability, and maintainability were the key factors of this tradeoff.

1E. Air Facilities

AD-A092 018/1 PC **A07**/MF **A01**
Transportation Systems Center, Cambridge, MA.
Airport Ground Access Planning Guide.
Final rept. Oct 78-Oct 80,
Mark Gorstein. Jul 80, 148p TSC-FAA-80-18, FAA-EM-80-9

Airport access has been identified by some airport authorities as a potential threat to the growth of aviation. In order to help airport planners and local authorities define the critical elements of an access problem and identify improvement projects for their consideration, TSC and FAA/OSEM have prepared a planning document designed to guide and direct the process. This document describes methods for identifying access constraints, step-by-step techniques for collecting needed access data, and useful ways to evaluate potential solutions. These solutions may include not only major construction projects but also changes in management and service that can lead to improved airport access. (Author)

AD-A092 057/9 PC **A03**/MF **A01**
Air Force Engineering and Services Center, Tyndall AFB, FL. Engineering and Services Lab.
Modal Analysis for Aircraft Response to Runway Surface Roughness.
Final rept. 1 Jun 78-30 Jun 80,
Ralph R. Gajewski. Jun 80, 41p Rept no. AFESC/ESL-TR-80-32

This report develops one and three degree-of-freedom linear vibration models for the prediction of aircraft response to runway surface roughness. The equations of motion are integrated in principal coordinates using modal analysis. The modal parameters required are natural frequency, damping ratio, and mode shape for each degree of freedom. Comparison of results is made with the TAXI code that has a nonlinear strut model. Results are presented for asymmetric motion due to spall profiles in the runway. (Author)

AD-A092 228/6 PC **A08**/MF **A01**
Bolt Beranek and Newman, Inc., Cambridge, MA.
A Guidance Document on Airport Noise Control.
Final rept.,
Andrew S. Harris, Robert L. Miller, and Joan M. Mahoney. Aug 80, 175p BBN-10667-10676, FAA/EE-80-37
Contract DOT-FA78WA-4105

This guidance document contains a general discussion of noise and noise control. Also given are sections on how humans respond to noise, noise control planning, noise descriptors that are used in the FAA's Integrated Noise MOdel, airport noise contours and land use planning, and citizen involvement in noise control planning. This document describes noise control actions and their benefits and costs. This document reflects the Department of Transportation/Federal Aviation Administration Airport Noise Abatement Policy of 1976, a detailed, straighforward statement of the problems of airport noise and the shared responsibilities of those who must work to control it. Also reviewed are the Federal legislature and administrative mandates for noise control. (Author)

AD-A092 240/1 PC **A03**/MF **A01**
Federal Aviation Administration, Washington, DC. Office of Environment and Energy.
The Need for Airport Noise Monitoring Systems. Their Uses, and Value in Promoting Civil Aviation.
Final rept.,
J. Steven Newman. Sep 80, 41p Rept no. FAA/EE-80-40

The need for airport noise monitoring systems is addressed from a variety of perspective focusing on potential benefits to airport proprietors, the airlines, noise impacted airport communities, and civil aviation in general. The operation and cost of typical noise monitoring systems is discussed. Various techniques for noise data presentation are also reviewed. The uses of radar tracking data in providing aircraft identification, position and ground track information is explored. Legal requirements for monitoring are specified and airport use restrictions are discussed. A list of U.S. and foreign airports with noise monitoring systems is presented. FAA research efforts pertaining to airport noise monitoring systems are also outlined. (Author)

AD-A092 364/9 PC **A05**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Slant Visual Range from Drop-Size Distribution.
Master's thesis,
Edwin Stanley Arrance. Aug 80, 92p Rept no. AFIT-CI-80-17T

This research investigated the feasibility of obtaining visual range and slant visual range by use of drop-size distribution. The results of Davies' equation for computing visibility from drop-size distribution were compared to known values and those obtained from Mie scattering theory based on a program developed by Kattawar and Plass. Next, Davies' equation was applied to a Marshall-Palmer drop-size distribution and a vertically varying distribution obtained from a program developed by Borchers. The Marshall-Palmer distribution and visibility agree with those from Borchers' work. Davies' method of obtaining visibility then was used successfully to compute slant visual range along a glideslope. The drop-size distribution at various levels along the glideslope was produced by Borchers' program. (Author)

AD-A092 455/5 PC **A12**/MF **A01**
Peat, Marwick, Mitchell and Co., San Francisco, CA.
Task Force Delay Study. William B. Hartsfield Atlanta International Airport. Volume II.
Jun 80, 255p
Contract DOT-FA77WA-3961
See also AD-A090 149.

This report contains supporting documentation for the detailed analysis of the William B. Hartsfield Atlanta International Airport. The analysis was conducted by the Atlanta Airport Improvement Working Group which had representatives from the City of Atlanta, the Air Transport Association, the airlines serving Atlanta, and the Federal Aviation Administration. Technical support was provided by Peak, Marwick, Mitchell & Co., and the FAA Technical Center. The purpose of the analysis was to determine the causes of delay and the potential delay reduction benefits of recommended improvements. The effort was part of the Airport Improvement Program. (Author)

AD-A092 456/3 PC **A14**/MF **A01**
Peat, Marwick, Mitchell and Co., San Francisco, CA.
Task Force Delay Study. Denver Stapleton International Airport, Volume II.
Mar 80, 313p
Contract DOT-FA77WA-3961
See also AD-A090 501.

This report contains supporting documentation for the detailed analysis of the Denver Stapleton International Airport. The analysis was conducted by the Denver Airport Improvement Working Group which had representatives from the City and County of Denver, the Air Transport Association, the airlines, serving Denver, and the Federal Aviation Administration. Technical support was provided by Peak, Marwick, Mitchell and Co., and the FAA Technical Center. The purpose of the analysis was to determine the causes of delay and the potential delay reduction benefits of recommended improvements. The effort was part of the Airport Improvement Program. (Author)

2.

AGRICULTURE

2B. Agricultural Economics

PB81-125775 PC **A03**/MF **A01**
Rhode Island Univ., Kingston. Dept. of Sociology and Anthropology.
Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica,
Richard B. Pollnac. Aug 77, 33p
ANTHROPOLOGY/WP-19, AID-PN-AAG-605
Contract AID/csd-2455

The paper reports study of 125 small-scale fishermen's investment orientations and their sociocultural correlates in the Gulf of Nicoya, Costa Rica. The interview schedule contained items on investment orientation using a hypothetical situation; self evaluation of socioeconomic position, perceived socioeconomic progress, optimism and efficacy; material culture such as household amenities and fishing technology; mass media exposure; and income, age and education. Data tables and diagrams are provided.

PB81-130874 PC **A03**/MF **A01**
Economics and Statistics Service, Washington, DC. Statistical Research Div.
Examination of Farmer-Reported Acreages.
Staff rept.,
Roberta B. Pense. Nov 80, 36p AGESS-801128

This report examines farmers' reported planted acreages in 71 corn fields and 57 soybean fields in Northern Missouri for bias. Results obtained for the planted acreages are assumed to be similar to the results for harvested acreages. Reported waste acreages and total field size are also examined for bias. The farmers' estimates of planted acreages were significantly different from the digitized planted acreages for both corn and soybean fields.

PB81-134165 PC **A03**/MF **A01**
Economics and Statistics Service, Washington, DC. National Economics Div.
The Impact of Demand-Sensitive Railroad Rates Upon the Storage and Transportation System for U.S. Feed Grains.
Staff rept.,
Linwood A. Hoffman. Oct 80, 34p AGESS-801022.1

A storage and transportation model of the U.S. feed grain industry was developed to measure the potential impacts of demand-sensitive rail rates. At the national level, a 5 to 15 percent change in rail rates simultaneously increased rail revenue and traffic volume and reduced seasonality of rail demand. Incentives were created in lieu of immediate rail transportation. As a consequence, total costs of transportation, handling and storage increased. Regional results differed slightly.

PB81-137705 PC **A12**/MF **A01**
Economics and Statistics Service, Washington, DC. National Economics Div.
Structure and Adjustments of the Farming Sector: A Data Base by Regions.
Staff rept.,
George W. Coffman. Oct 80, 252p AGESS-801002

Statistical tables are presented by regions on farm number, size, land in farms, sales, assets, employment, income, regional distribution of receipts, land use, crop and livestock numbers, acres, yield and production. Also, included for regions are distributions of sales, acres, values of land, type of farm, tenure, form of organization, off-farm employment, and age of operators. Some cross tabulations between variables are shown. Data spans the 1950 to 1978 period, but varies by item.

2C. Agricultural Engineering

PB81-123549 PC **A02**/MF **A01**
National Materials Advisory Board (NRC), Washington, DC.
The Investigation of Grain Elevator Explosions.
Final rept.
Sep 80, 24p NMAB-367-1
Contract DL-J-9-F-8-0137

Grain elevator explosions have become a problem of serious concern to a number of federal agencies and to the grain-handling industry. The explosiveness of grain dust when ignited in a confined space has been known for years. However, the conditions and sequence of events leading to an explosion, the point and cause of ignition, and the propagation of an explosion in actual occurrences have remained relatively unknown. Remedial action to reduce the number and severity of explosions must be based on determination of these factors. This report emphasizes that previous investigations following elevator explosions have yielded little information other than that an explosion occurred and that damage was of a certain degree. The investigation of an explosion to obtain a complete understanding of the event requires a team having specialized skills and capabilities. Such teams do not presently exist. The need for such a team and its qualifications and operation are outlined in this report.

PB81-127342 PC **A05**/MF **A01**
South Dakota State Univ., Brookings. Water Resources Inst.
A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
Completion rept. Oct 76-Mar 79,
Maurice L. Horton, C. G. Carlson, Ronald E. Beyer, Loyd R. Stone, and Roy E. Gwin, Jr. Oct 80, 93p W81-00314, OWRT-B-052-SDAK(1)
Contract DI-14-34-0001-7187

The underlying assumption for off-season irrigation has been that irrigation up to field capacity during the low evaporative demand seasons, Fall, early/late Winter, and early Spring, would represent an efficient use of irrigation water. The major question analyzed in this study was: would off-season irrigation be a practical and workable practice. The study was carried out by three independent research groups in Montana, Kansas, and South Dakota. For South Dakota, the winter wheat crop did not appear to have increased winter survivability from fall irrigation, and weeds appeared much less manageable. For Montana, the second cutting in the Fall of 1979 was the only significantly different alfalfa yield. For Kansas it was concluded that Fall irrigation increasing the profile soil water content above 18 inches would be relatively inefficient in providing water for the next summer's crop.

PB81-127557 PC **A02**/MF **A01**
Oklahoma State Univ., Stillwater. Dept. of Agricultural Engineering.
Investigation of Factors Affecting Energy for Irrigation Pumping.
Technical completion rept.,
A. D. Barefoot. Sep 80, 16p W81-00509, OWRT-A-081-OKLA(1)
Contract DI-14-34-0001-8038

Operation efficiency was evaluated for 19 irrigation pumping plants covering five counties in Oklahoma. Most were operated using natural gas; a few using electricity. Most of the irrigation pumps tested were found to be operating at fairly high efficiency levels. Average pump efficiency was found to be about 62 percent. Improved matching of engines to pumps and pumps to well conditions would, in the long term, help reduce irrigation energy use.

2F. Forestry

PB81-130015 PC **A02**/MF **A01**
Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.
Lumber Yield Potential of Aspen in the Rocky Mountains.
Forest Service research paper (Final),
Eugene M. Wengert, and Dennis M. Donnelly. Dec 80, 14p FSRP-RM-227
Prepared in cooperation with Virginia Polytechnic Inst. and State Univ., Blacksburg, VA. Dept. of Forestry and Forest Products.

The yield of sawn products from aspen (Populus tremuloides) trees from northern New Mexico and eastern Utah, both in terms of volume and dollar value, was related to trail tree and log grades. Trial grading systems generally allowed separation of trees and logs into different levels of volume and dollar value recovery.

PB81-134173 PC **A02**/MF **A01**
Northeastern Forest Experiment Station, Broomall, PA.
Skyline Harvesting in Appalachia.
Forest Service research paper (Final),
J. N. Kochenderfer, and G. W. Wendel. 1978, 13p NEFES/81-162, FSRP-NE-400

The URUS, a small standing skyline system, was tested in the Appalachian Mountains of north-central West Virginia. Some problems encountered with this small, mobile system are discussed. From the results of this test and observation of skyline systems used in the western United States, the authors suggest some machine characteristics that would be desirable for use in the Appalachians.

PB81-134199 PC **A02**/MF **A01**
Northeastern Forest Experiment Station, Broomall, PA.
Carbohydrate Levels in Current-year Shoots of Sugar Maple.
Forest Service research paper (Final),
John R. Donnelly. 1976, 12p NEFES/81-160, FSRP-NE-347

In leaves, alcohol-soluble sugar concentration was highest in the morning and lowest in late afternoon or early evening; diurnal changes in starch lagged about 5 hours behind changes in sugar. Carbohydrate concentrations in current-year stems did not vary diurnally. In leaves, sugar concentration was higher in September than it had been in June; starch concentration was much higher in June. The opposite was true for current-year stems.

PB81-134215 PC **A02**/MF **A01**
Northeastern Forest Experiment Station, Broomall, PA.
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
Forest Service research paper (Final),
Miroslaw M. Czapowskyj, and Edward A. Sowa. 1976, 11p NEFES/81-161, FSRP-NE-348

Lime, fertilizer, and mulch were tried on anthracite coal-breaker refuse in attempts to establish a ground cover of crownvetch. Lime had an effect

after 7 years and is considered essential for establishing crownvetch on these highly acid sites. Fertilizer had little effect on survival but enhanced establishment of ground cover. Mulch also provided some benefit. Chemical characteristics of the refuse were improved on areas that received lime and fertilizer treatments.

PB81-134314 PC **A02**/MF **A01**
Northeastern Forest Experiment Station, Broomall, PA.
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
Forest Service research paper (Final),
Ronald C. Wilkinson. 1975, 10p NEFES/81-144, FSRP-NE-326

An attempt to increase oleoresin exudation pressure of eastern white pine, and hence resistance to the white-pine weevil, by using a silicone antitranspirant was unsuccessful. Internal tree water balance of treated trees was increased; but apical shoot growth of trees treated with the antitranspirant was retarded, and the trees were much more susceptible to white-pine weevil attack than other trees used as controls.

PB81-141996 PC **A02**/MF **A01**
Northeastern Forest Experiment Station, Broomall, PA.
Flowering and Seed Production in Seven Hardwood Species.
Forest Service research paper (Final),
Ted J. Grisez. 1975, 12p NEFES/81-134, FSRP-NE-315

Flowering and seed production of selected trees in northwestern Pennsylvania and southwestern New York were rated visually for several years. The seed crops of white ash and sugar maple were closely related to the amount of flowering, and flowering can be used to predict seed crops in those species. Consistency of seed production in species and individuals, and other aspects of seed production are discussed.

3.

ASTRONOMY AND ASTROPHYSICS

3B. Astrophysics

AD-A091 895/3 PC **A02**/MF **A01**
Iowa Univ., Iowa City. Dept. of Physics and Astronomy.
The Volume Emissivity of Type III Radio Bursts.
Progress rept.,
Robert L. Tokar, and Donald A. Gurnett. 14 Nov 79, 6p
Contracts N00014-76-C-0016, NAS5-20093
Pub. in Jnl. of Geophysical Research, v85 nA5 p2353-2356, 1 May 80. Supersedes report dated Sep 79, AD-A079 612. Sponsored in part by Contract NAS5-11431 and Grant NASA-NGL-16-001-043.

No abstract available.

AD-A091 898/7 Not available NTIS
Stanford Univ., CA. Inst. for Plasma Research.
Origin of the Warped Heliospheric Current Sheet,
J. M. Wilcox, J. T. Hoeksema, and P. H. Scherrer. 18 Mar 80, 4p
Contracts N00014-76-C-0207, NAS5-24420
Supersedes report dated Mar 80, AD-A083 030. Sponsored in part by Grants NGR-05-020-559 and NSF-ATM77-20580.
Availability: Pub. in Science, v209 p603-605, 1 Aug 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 369/8 PC **A06**/MF **A01**
TRW Defense and Space Systems Group, Redondo Beach, CA. Space Sciences Dept.
A Study of the Association of Pc 3, 4 Micropulsations with Interplanetary Magnetic Field Orientation & Other Solar Wind Parameters.
Final rept. 30 Sep 77-30 Sep 79,
Eugene W. Greenstadt. 13 Nov 77, 121p TRW-30435-6007-RU-00, AFOSR-TR-80-1161
Contract F49620-77-C-0018

This report describes the results of a research program extending from 1 Dec 1977 to 30 Sept 1979. The objectives of the program have been to study the relationships between geomagnetic pulsation activity in the period range 10 to 300 sec (Pc 3,4, and 5 by traditional classification) and solar wind parameters. The study has centered on two particular parameters, solar wind speed VSW and interplanetary magnetic field (IMF) cone angle theta XB (the angle between the IMF and the sun-earth line) as representing the critical quantities in two models of pulsation origin. (Author)

AD-A092 491/0 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8,
S. D. Price, T. L. Murdock, A. McIntyre, R. E. Huffman, and D. E. Paulsen. 6 Feb 80, 3p Rept no. AFGL-TR-80-0325
Pub. in The Astrophysical Jnl., v240 pL1-L2, 15 Aug 80.

No abstract available.

CBPF-A0002/79 PC **A02**/MF **A01**
Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro.
Microprobe Observations on the Santa Catharina Meteorite.
H. D. Schorscher, C. M. Wiedemann, J. Danon, R. Scorzelli, and I. S. Azevedo. Jan 79, 3p
U.S. Sales Only.

The composition of the Ni-rich phase of the Santa Catharina meteorite is verified through microprobe observations. (Atomindex citation 11:519217)

CBPF-A0003/79 PC **A02**/MF **A01**
Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro.
Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
J. Danon, R. B. Scorzelli, and I. S. Azevedo. Jan 79, 3p
U.S. Sales Only.

Experiments are reported which show that the martensitic trasformation gamma phase implies alpha phase is induced by mechanical treatment of the meteorites. . (Atomindex citation 11:519103)

CBPF-A0004/79 PC **A02**/MF **A01**
Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro.
Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
J. Danon, R. Scorzelli, and I. S. Azevedo. Jan 79, 3p
U.S. Sales Only.

The Moessbauer absorption spectra of a polished thin slice of the Santa Catharina meteorite is measured up to 50 kOe, using an Oxford superconducting magnet. (Atomindex citation 11:519104)

PB81-851198 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Extraterrestrial Atmospheres. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 190p NERACEI NT1670
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on extraterrestrial atmospheres. Studies of atmospheres of the other planets, using scientific satellites and other methods, are included. (Contains 200 citations.)

4.

ATMOSPHERIC SCIENCES

4A. Atmospheric Physics

AD-A091 878/9 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems,
M. Smiddy, W. J. Burke, N. A. Saflekos, F. J. Rich, and D. A. Hardy. 1979, 6p Rept no. AFGL-TR-80-0295
Pub. in Proceedings of Chapman Conference on High Latitude Electric Field, p29-1 - 29-4 1980.
Availability: Microfiche copies only.

No abstract available.

AD-A091 888/8 PC **A03**/MF **A01**
Royal Aircraft Establishment, Farnborough (England).
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
Technical rept.,
H. Hiller, and D. G. King-Hele. Apr 80, 30p RAE-TR-80052, DRIC-BR-74910

Cosmos 1009 rocket was launched on 19 May 1978 into an orbit with initial perigee height 150 km and apogee 1100 km: its lifetime was only 17 days. The orbit has been determined daily during the final 14 days of its life. The orbits were analysed to reveal three features of the upper atmosphere at heights between 125 and 175 km. From the decrease in perigee height, five values of density scale height, accurate to + or - 4%, were obtained. Atmospheric oblateness produced a change of 4 deg in perigee position during the last four days of the life. Analysis showed that the ellipticity of the upper atmosphere was approximately equal to that of the Earth, f, for the first two of the four days, and about 1/2 f in the last two. The orbital inclination was analysed to determine zonal winds at heights of 150-160 km at latitudes near 47 deg north. The zonal wind was very weak (0 + or - 30 m/s) for 23-28 May at local times near 03 h; and 90 + or - 30 m/s east-to-west for 29 May to 4 June at local times near 01 h. (Author)

AD-A091 955/5 PC **A11**/MF **A01**
General Electric Co., Philadelphia, PA. Space Div.
Design Study for Ground-Based Atmospheric Lidar System.
Final rept. 29 Feb-29 Sep 80,
R. L. Franklin, G. W. Bethke, and L. W. Springer. 29 Sep 80, 231p AFGL-TR-80-0264
Contract F19628-80-C-0062

The Ground-Based Atmospheric Lidar System (GBALS) is a two-color lidar configuration which provides simultaneous measurements of light backscatter from laser wavelengths at 532 nm (green) and 355 nm (near UV). Light scatter measurements are implemented through photon counting for both the Rayleigh and Mie scatter phenomena. The system includes on-site data processing/reduction to obtain atmospheric molecular density and haze characteristics in the altitude region from 20 to 97 kilometers. (Author)

AD-A091 972/0 PC **A11**/MF **A01**
Aerodyne Research, Inc., Bedford, MA. Center for Electro-Optical Signature Studies.
Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
Final technical rept.,
David C. Robertson, Lawrence S. Bernstein, and Robert Haimes. Oct 80, 226p Rept no. ARI-RR-232
Contract N60530-80-C-0087

This report presents a modified version of the atmospheric transmission and radiation code LOWTRAN5 which includes: (1) an increase in the spectral resolution from 20 to 5/cm, (2) the addition of temperature dependent molecular absorption coefficients, and (3) the use of a multi-parameter, Doppler-Lorentz band model for calculation of molecular transmittance. A set of 5/cm band model parameters have been developed using the molecular data in the Air Force Geophysics Lab HITRAN line compilation for the major atmospheric absorbers. The absorption coefficient, S/d, and line density, l/d, band model parameters were determined at 5/cm resolution from 400-10,000/cm (1-25 micrometers) and at 200, 225, 250, 275, and 300K. Examples of these parameters for H2O and the uniformly mixed gases are presented. In addition to the S/d and l/d band model parameters, the need for and determination of the molecular continuum absorption due to the tails of lines originating outside a given spectral interval are presented. Comparisons of LOWTRAN5 transmittance and radiance calculations with the modified version, LOWTRAN5(BMOD), are shown and discussed. Comparison of predictions using both versions of LOWTRAN5 with transmittance and radiance measurements are included. A detailed set of appendices are included which cover instructions for the required modifications to LOWTRAN5, implementation directions, program listings, and test cases. (Author)

AD-A091 980/3 PC **A03**/MF **A01**
SRI International, Menlo Park, CA.
Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
Topical rept. no. 5, 1 Oct-1 Nov 79,
Roland T. Tsunoda. 1 Jun 80, 26p DNA-5324T
Contract DNA001-79-C-0153

An important objective of the Defense Nuclear Agency is to understand the physical processes that control the dissipation of turbulent structure in plasmas. Such turbulent structures occur as a consequence of high-altitude nuclear events as well as in the natural, disturbed equatorial ionosphere. Analysis and understanding of those processes in the nighttime equatorial F-region ionosphere that are analogous to those found in the nuclear environment can lead to an intelligent extrapolation of equatorial findings to the nuclear case. In the equtaorial F-region ionosphere, the turbulent cascade process had been found previously to extend from irregularity spatial wavelengths longer than tens of kilometers down to wavelengths as short as 36 cm. To investigate the small-scale regime of wavelengths less than 36 cm, a radar backscatter experiment was conducted in the Kwajalein Atoll, Marshall Islands using a frequency that corresponds to an irregularity wavelength of 11 cm. The first observations of radar backscatter from 11-cm equatorial field-aligned irregularities (FAI) are described. These measurements extend the spatial wavelength regime of F-region FAI to lengths that approach both the electron gyroradius and the Debye length. Agreement of these results with the theory of high-frequency drift waves suggests that these observations may be unique to the equatorial ionosphere. That is, the requirement for low electron densities that the theory calls for may preclude the existence of 11-cm FAI elsewhere in the F-region ionosphere, except in equatorial plasma bubbles. (Author)

AD-A092 006/6 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Airborne Studies of Equatorial F Layer Ionospheric Irregularities,
E. J. Weber, J. Buchau, and J. G. Moore. 23 May 79, 13p Rept no. AFGL-TR-80-0320
Pub. in Jnl. of Geophysical Research, v85 nA9 p4631-4641, 1 Sep 80.

No abstract available.

AD-A092 083/5 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Seasonal and Solar Cycle Variations of Equatorial Spread-F in the American Zone,
R. G. Rastogi. 9 Sep 79, 7p Rept no. AFGL-TR-80-0318
Pub. in Jnl. of Atmospheric and Terrestrial Physics, v42 p593-597 1980.

No abstract available.

AD-A092 084/3 PC **A02**/MF **A01**
Emmanuel Coll., Boston, MA.
Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite,
Santimay Basu, Sunanda Basu, Allen L. Johnson, J. A. Klobuchar, and C. M. Rush. 1980, 6p
AFGL-TR-80-0319
Contract F19628-78-C-0005, Grant NSF-ATM78-25264
Pub. in Geophysical Research Letters, v7 n8 p609-612 Aug 80.

No abstract available.

AD-A092 086/8 PC **A02**/MF **A01**
Iowa Univ., Iowa City. Dept. of Physics and Astronomy.
A Test of Two Theories for the Low-Frequency Cutoffs of Nonthermal Continuum Radiation.
Progress rept.,
Robert R. Shaw, and Donald A. Gurnett. 27 Jul 78, 8p
Contract N00014-76-C-0016
Pub. in Jnl. of Geophysical Research, v85 nA9 p4571-4576, 1 Sep 80.

No abstract available.

AD-A092 152/8 PC **A03**/MF **A01**
Science Applications, Inc., La Jolla, CA.
Satellite Measurements of Atmospheric Aerosols.
Annual rept. 1 Apr 79-14 Nov 80,
M. Griggs. 14 Nov 80, 27p Rept no. SAI-131-80-603-LJ
Contract N00014-77-C-0489

Ground truth measurements of the atmospheric aerosol optical thickness and radiance data for the GOES-1 and SMS-2 satellites, show that the satellite sensors were stable over a period of eighteen months, and that there is probably a difference in the radiometric calibrations of the sensors. Theoretical calculations show that errors, due to variations in the aersol properties, in inferring the aerosol content from a satellite radiance measurement are similar for the nadir viewing sensors (e.g., Landsat MSS) and for the scanning sensors (e.g., NOAA=6 AVHRR). (Author)

AD-A092 378/9 PC **A03**/MF **A01**
Johns Hopkins Univ., Silver Spring, MD. Applied Physics Lab.
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
Final rept. Aug 79-Jan 80,
Richard A. Farrell, Robert H. Andreo, and Jerry A. Krill. Jun 80, 35p APL/JHU/RAD-7718-01, ARCSL-CR-80046, AD-E410 335
Contract N00024-78-C-5384

Vector stochastic variational principles are derived for the statistics of the scattering of a plane electromagnetic wave from inhomogeneous and anisotropic conducting, dielectric objects or surfaces with arbitrary, random electrical and geometrical characteristics.

AD-A092 439/9 PC **A08**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
Doctoral thesis,
Grant Clifford Aufderhaar. Mar 80, 162p Rept no. AFIT-CI-80-3D

Analytical solutions to the thermal radiative transfer equation for one and two-dimensional cylindrical geometries for an isothermal cloud cylinder are derived using a truncated spherical harmonics expansion for the intensity and scattering phase function. Higher order approximations are generated by utilizing the recursion properties of the modified Bessel functions. Computational results are presented and physically discussed for a hypothetical atmosphere in the infrared 10 micron wavelength and in a realistic atmosphere in the microwave 50-60 GHz frequencies. Comparisons are made with a discrete-ordinate plane-parallel model and finite cubic and rectangular models in the infrared region and with a discrete-ordinate plane-parallel model in the microwave region. Results demonstrate that finite clouds have emissivities less than those of plane-parallel clouds and that optically thick cylindrical clouds should not be considered as black clouds. Further, the effect of the angle of observation of the satellite on remote sensing of a cloud pattern is demonstrated to be significant. Case studies are presented utilizing Defence Meteorological Satellite Program microwave sounder data along with standard meteorological data. Calculations for nonprecipitating and clear cases were similar and in good agreement with observations.

AD-A092 445/6 PC **A04**/MF **A01**
Naval Research Lab., Washington, DC.
Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
Interim rept.,
S. T. Hanley, J. A. Dowling, R. F. Horton, J. A. Curcio, and C. O. Gott. 29 Oct 80, 71p Rept no. NRL-8422

High-resolution atmospheric transmission measurements have been made at White Sands Missile Range, New Mexico. Wavelengths measured include 0.63 micron, 1.06 micron, 3-5 micron, and 8-14 micron. Meteorological variables including air temperature, dewpoint, wind speed and direction, solar radiation, and the atmospheric temperature structure parameter CT were monitored during transmission measurements, at the endpoints of the propagation path. Stronger continuum absorptions at DF laser frequencies than expected and limiting effects of high winds and atmospheric turbulence were observed. (Author)

AD-A092 448/0 PC **A03**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
Final rept.,
R. Narcisi, E. Trzcinski, G. Federico, L. Wlodyka, and P. Bench. 9 Jul 80, 27p Rept nos. AFGL-TR-80-0222, AFGL-ERP-711

Two multi-instrumented Terrier Malemute rockets including ion mass spectrometers were launched from Kwajalein on the nights of 17 and 23 July 1979 during equatorial Spread F events. Detailed ionospheric structure and composition measurements were made between about 100 and 500 km. The first flight penetrated six areas of 'bite-outs' spread over the range 265 to 560 km on upleg as well as several more depletions on downleg. The strongest irregularties, up to 90 percent depletion, occurred at the altitudes of 265 to 285 km just above the F region ledge at 250 km. There was no evidence of enhanced bottomside tracre ions (NO(+), O2(+) or meteoric ions) in any of the holes, which were composed mostly of O(+) and smaller amounts of N(+). From the composition signatures, the source of the bubbles appeared to be near the F region ledge. Within the higher altitude holes, the N(+)/O(+) ratios were smaller than the adjacent ionosphere ratios, indicating not only that the source regions were near th eledge, but also that the bubbles had initiated earlier when the ledge was at higher altitudes. While O(+) and N(+) exhibited strong fluctuations, NO(+) and O2(+) had fairly smooth profiles with scale heights similar to N2 and O2 respectively, demonstrating steady-state conditions and a stable neutral atmosphere with an exospheric temperature of about 1100K. This suggests that neutral atmospheric turbulence is not a major source of the ionospheric irregularities. Time periods for ion-chemical processes to achieve the observed composition are discussed interms of bubble formation times and rise velocities.

Field 4—ATMOSPHERIC SCIENCES

Group 4A—Atmospheric Physics

AD-A092 479/5 PC **A07**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
A New Horizontal Gradient, Continuous Flow, Ice Thermal Diffusion Chamber and Detailed Observation of Condensation-Freezing and Deposition Nucleations.
Doctoral thesis,
Edward Mason Tomlinson. Jun 80, 127p Rept no. AFIT-CI-80-21D

In the attempt to develop a new horizontal gradient, continuous flow, ice thermal diffusion chamber, a number of new schemes have been devised. The subsequent use of the chamber for ice nucleus measurements has resulted in a number of new findings both in the technology of instrumentation for ice nucleus studies and in the mechanisms and nucleating behaviors of both natural and artificial ice nuclei.

AD-A092 503/2 PC **A03**/MF **A01**
Battelle Columbus Labs., OH.
Comparison of Electron Densities in the Middle Atmosphere Indicated by Rocket Borne Probing Techniques.
Final rept.,
Thomas M. York. Aug 80, 43p ERADCOM/ASL-CR-80-0100-2
Contract DAAG29-76-D-0100
Prepared in cooperation with Pennsylvania State Univ., University Park. Ionosphere Research Lab.

Indications of electron density in the middle atmosphere (40-90 km) have been calculated from several different rocket-borne probes, and intercomparisons of these values have been made. Blunt probe data have been analyzed to determine electron densities directly from values of current at positive bias saturation voltages. Saturation currents from subsonic blunt probes are favorably compared with those from supersonic nose tip probes. Supersonic saturation currents have been analyzed to predict electron densities without any calibration from other diagnostics. The effects of shock waves or shock compressions have been discussed and included in electron density computations. The related influence of electron attachment on electron density determinations has been evaluated, and it appears that rates higher than those presently accepted are compatible with data. Outgas of water vapor from rocket and probe materials is described, and the amount of outgas near the surface of a probe is evaluated. The influence of water vapor on impedance probe measurements is evaluated for a limiting condition, and in that case is found to be significant. Comparison of electron density data on one day during the 1979 Canada-US Solar Eclipse Program is made, but close agreement is not evident. This is partially due to the dynamic conditions during the data gathering. (Author)

AD-A092 504/0 PC **A02**/MF **A01**
Atmospheric and Environmental Research, Inc., Cambridge, MA.
Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle,
Nien Dak Sze, and Malcolm K. W. Ko. 13 Nov 79, 19p AFGL-TR-80-0343
Contract F19628-78-C-0215
Pub. in Atmospheric Environment, v14 p1223-1239 1980.

No abstract available.

AD-907 560/7 PC **A10**/MF **A01**
Avco-Everett Research Lab., Inc., Everett, MA.
Analysis of Barium Clouds. Volume I.
Final technical rept.,
Bennett Kivel, Lewis M. Linson, S. Powers, and L. F. Ciancíolo. Oct 72, 215p RADC-TR-72-336-Vol-1
Contract F30602-71-C-0067, Grant ARPA Order-1057
See also Volume 2, AD-524 305L.
Distribution limitation now removed.

Several aspects of the analysis of barium ion clouds are presented including ion cloud modeling, comparison of radar and optical data, and correlation of data with theory. A quantitative model has been developed from which various properties of barium ion clouds, primarily their size, time history of the peak electron concentration, and height-integrated conductivity can be estimated. These estimates are in excellent agreement with the observations of Secede ion clouds. The modeling of the radiation transport in the ion cloud has been confirmed by a Monte Carlo calculation. The optical analysis of Spruce at R + 14 min has been corrected for effects of cloud geometry and the results for ion density are found self-consistent and in agreement with radar measurements. A summary review is given of the values and limitations of photographic data. The current status of theoretical understanding of the dynamics of barium ion clouds is reveiwed. Particular attention is given to their motion, deformation, and the properties of striations including onset time, scale size, and dissipation. (Author)

CONF-7911108- PC **A12**/MF **A01**
Boston Univ., MA.
Proceedings of the Workshop/Symposium on the Preliminary Evaluation of the Ionospheric Disturbances Associated with the HEAO-C Launch, with Applications to the SPS Environmental Assessment.
M. Mendillo, and B. Baumgardner. Aug 80, 260p
Contract W-31-109-ENG-38
Symposium on preliminary evaluation of the ionospheric disturbances associated with the HEAO-C launch with application to the SPS environmental assessment, Boston, MA, USA, 11 Nov 1979.

The launch of NASA's third High Energy Astrophysical Observatory (HEAO-C) at 05:28 U.T. on 20 September 1979 by an Atlas-Centaur rocket produced an extraordinary opportunity to monitor a large-scale, artificially-induced depletion of the Earth's ionosphere. The resultant plasma hole, an effect caused by rapid chemical processes between the rocket's exhaust plume of H sub 2 O and H sub 2 and the ionospheric constituents (0 exp + and e exp -), was detected by an extensive network of temporary observatories set up specifically for the event. The purpose of this report is to provide a brief summary of the initial results obtained. The experiments of opportunity that initially emerged from the HEA0-Hole announcement ultimately developed into an extensive and coordinated observing program aimed at addressing a wide variety of scientific and technological topics related to atmospheric modifications. While a considerably longer data-analysis time is needed for a comprehensive understanding of the induced effects, each experimentor/participant at the Workshop was able to provide a quick look summary of results in order that timely information on rocket effluent consequences could be made available to the Department of Energy/Argonne National Laboratory environmental assessment study for the proposed Satellite Power System (SPS). Twenty papers are included. (ERA citation 06:001298)

PB81-132912 PC **A04**/MF **A01**
World Data Center A for Solar-Terrestrial Physics, Boulder, CO.
The Equatorial Latitude of Auroral Activity during 1972-1977,
N. R. Sheeley, Jr., R. A. Howard, and B. S. Dandekar. Oct 80, 70p UAG-78, NOAA-80102802
Prepared in cooperation with Naval Research Lab., Washington, DC., and Air Force Geophysics Lab., Hanscom AFB, MA.

The equatorial latitude of auroral activity has been derived from both electron and optical observations with the DMSP satellites. Essentially all of these observations have been used to produce a nearly continuous plot of invariant geomagnetic latitude versus time during the 5-year interval June 1972 - September 1977. This plot has two main characteristics: (1) a diurnal variation of approximately + or - 5 degrees which is somehow associated with the precession of the Earth's magnetic dipole axis about the Earth's rotation axis and (2) an irregular variation of roughly 5-10 degrees for intervals of one to several days associated with the occurrence of solar flares and coronal holes. With the help of a condensed, Bartels-type display of these measurements, it is concluded that (1) modest aurural expansions occur during the main body of high-speed streams from coronal holes and (2) great expansions occur only during intervals of intense interplanetary magnetic fields, such as may occur at the leading edge of a high-speed stream or at a flare-produced interplanetary shock.

PB81-855066 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 74-May 80,
Howard L. Ogushwitz. Aug 80, 183p NERACIAANT0237
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss such topics as Whistler waves in finite plasma, Whistler atmospherics, and Whistler modes in the magnetosphere. (Contains 200 citations.)

PB81-855074 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Howard L. Ogushwitz. Aug 80, 99p NERACEI NT0237
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss such topics as Whistler waves in finite plasma, Whistler atmospherics, and Whistler modes in the magnetosphere. (Contains 100 citations.)

4B. Meteorology

AD-A092 121/3 Not available NTIS
Stanford Univ., CA. Edward L. Ginzton Lab. of Physics.
Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source,
M. Endemann, and R. L. Byer. 9 Jun 80, 4p ARO-15278.10-P
Contract DAAG29-79-C-0181
Availability: Pub. in Optics Letters, v5 n10 p452-454 Oct 80.

No abstract available.

AD-A092 139/5 PC **A03**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Improvement in Tropical Cyclone Forecasts by Multiple Linear Regression Equation Adjustment of Analog Tracks.
Master's thesis,
Kenneth Allen Peterson. Jun 80, 48p

A statistical technique is tested for adjusting the analog storm tracks used in the Northwest Pacific Analog Tropical Cyclone Forecasting Program (TYAN78). In the present version the tracks are rotated based on linear extrapolation of the deviations of the past 12-h motion for the analog and the current storm. The technique proposed here uses multiple linear regression equations to adjust the 12-h through 72-h analog positions. Predictors include translation speeds along the analog track from the -36-h to 72-h positions plus the comparison of the past 12-, 24- and 36-h translated positions of the analog with the current storm. By simply averaging the regression adjusted positions, the vector forecast errors were smaller than the TYAN78 errors. Both the TYAN78 and regression adjusted forecast errors were less than the official JTWC forecast errors. The improvement in the regression adjusted forecasts was in a smaller standard deviation relative to the mean position. For example, in the dependent sample the mean errors at 72 h for the official forecast, TYAN78 forecast and regression adjusted forecast were 438, 321, and 288 nautical miles, respectively. The corresponding standard deviations were 198, 151, 162 nautical miles. (Author)

AD-A092 217/9 PC **A07**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.

The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
Master's thesis,
Peter Werner Speck. Aug 80, 129p Rept no. AFIT-CI-80-43T

A study of the earth-atmosphere system with multispectral remote sensing measurements from Nimbus VI satellite was carried out over the North American continent when a mid-latitude cyclone was present. Correlative information between such conventional meteorological parameters as clouds, precipitation, atmospheric temperature, snow cover, and soil moisture was made with measurements from the SCAMS, ESMR, and HIRS experiments on Nimbus VI. The results showed SCAMS microwave measurements were most sensitive to atmospheric parameters such as temperature and precipitating clouds while ESMR microwave measurements were dependent on surface conditions especially snow cover and soil moisture. Infrared and reflected solar radiance measurements from HIRS were useful in identifying cloud areas with conventional meteorological data. (Author)

AD-A092 372/2 PC **A04**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Determination of the Systematic Bias and Variability of the Error of the National Meteorological Center's Six-Layer Baroclinic Model.
Master's thesis,
James Keil Woessner. 1980, 67p Rept no. AFIT-CI-80-40T

Geographical distribution of the bias and variability of the error in the 500 and 1000mb geopotential height forecasts produced by the National Mereorological Center's operational six-layer baroclinic model was investigated. Forecasts and the verifying observations for six winter seasons beginning with the 1973-74 winter were used. It was found that the model systematically damps out the amplitude of the climatological mean surface highs and lows, and 500mb troughs and ridges. Typical values of the bias in the mean 500mb standing wave troughs are on the order of 60 meters; in these regions the bias accounts for up to 30% of the rms error. Throughout the forecast period, the standard deviation of the forecast error about its own mean shows regional contrasts similiar to climatological standard deviation patterns. These non-systemtic forecast errors tend to be largest in storm tracks over the western oceans and quite small at low latitudes. Normalization of the standard deviation of the error by the climatological standard deviation of the observation results in a relatively featureless field except for a monotonic pole-to-equator increase. The normalized errors are larger at the 1000mb level than at the 500mb level over most of the hemisphere but they are of comparable magnitude over the eastern Atlantic and Europe. The vertical structure of the error field, as manifested in the geographical distributions of the correlation between the 1000 and 500mb forecast error, and the ratio of the amplitudes of error fluctuations at those levels, was found to be similiar to that of real atmospheric fluctuations.

AD-A092 373/0 PC **A05**/MF **A01**
Naval Environmental Prediction Research Facility, Monterey, CA.
Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
Final rept.,
Samson Brand, and Jack W. Blelloch. Jul 80, 77p Rept no. NEPRF-TECH PAPER-5-76-CH-2 Change 2 to report dated Feb 78, AD-A058 147.

This publication is a compilation of many typhoon-haven studies of ports and harbors in the western Pacific and Indian Ocean. Some of the studies, originally published in long form by the Naval Environmental Prediction Research Facility, have been restructured and condensed for this compilation; others have been prepared directly for this condensation format. This publication is designed to serve as a decision-making aid for commanders, ship captains, and ship routing personnel regarding typhoons that threaten the ports discussed. (Author)

AD-A092 408/4 PC **A03**/MF **A01**
Naval Postgraduate School, Monterey, CA.
A Statistical Analysis of Western North Pacific Ocean Tropical Cyclone Danger Area Forecasts.
Master's thesis,
Terry Dean Snow. Sep 80, 50p

This study investigates 24-hr forecasts of 30-kt wind danger areas for western North Pacific Ocean tropical cyclones. The forecasts for 1979 have been verified against the 30-kt wind areas observed over a period of 24 hours. The threat scores of these verifications have been statistically analyzed. The dependency of threat scores on the five parameters: (a) speed of movement, (b) maximum observed wind, (c) direction of movement, (d) latitude and (e) longitude, was found to exist at the 1% level of significance. (Author)

AD-A092 411/8 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Statistical Adjustment of the Hatrack Typhoon Track Forecasting Model.
Master's thesis,
Ronald Charles Gilchrist. Jun 80, 66p

A statistical technique proposed by Elsberry and Frill (1980) for adjusting dynamical tropical cyclone motion forecasts is extended to the Hurricane and Typhoon Tracking (HATRACK) scheme of Renard et al (1968). The objective is to eliminate systematic HATRACK errors through use of linear regression equations. Predictors derived from comparison of backward integration of the HATRACK model with known positions of the storm are included to relate past HATRAC performance with future performance. The predictors also include translation speeds along the -36 hr to +72 hr track plus position and radius of the storm at the initial time. Regression equations are derived from dependent samples of 60 and 61 storms for the 500, 700 and 850 mb steering levels. Tests of the equations with the dependent samples indicate improvement over typical forecast error averages. The regression scheme approaches the same error distribution with time regardless of steering level. In tests with an independent sample of 31 storms, the regression equations were able to reduce the systematic longitudinal/latitudinal errors at all levels. In these tests, the regression scheme reduced HATRACK bias more efficiently than the bias correction of the Modified Hurricane and Typhoon Tracking (MOHATT) model. (Author)

AD-A092 420/9 PC **A09**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Dynamic Interactions between the Troposphere and Stratosphere.
Doctoral thesis,
James Paul Koermer. 1980, 200p Rept no. AFIT-CI-80-31D

A primitive equation spectral model using spherical harmonics is formulated to study interactions between the troposphere and stratosphere in association with sudden stratospheric warmings. In order to follow vertical wave propagation so important to this process, the model consists of 31 levels with 5 in the troposphere and the other 26 in the stratosphere and mesosphere. Using sigma coordinates for the former and log-pressure coordinates for the latter, separate equations for each system are combined to form a single matrix governing equations. The gradual introduction of planetry scale topography to an initially balanced state representative of observed mean winter conditions in the Northern Hemisphere is used to force changes in the initial field during 40 day time integrations. Utilizing the same initial tropospheric conditions, three cases were run. The first case started with a weak polar night jet in the stratosphere and mesosphere. The second case had a much stronger polar vortex. For the third case, a lid was placed on the troposphere and no interaction was allowed with the atmosphere at higher levels. Results of these integrations indicate that realistic stratospheric warmings can be simulated by simple orographic forcing.

AD-A092 426/6 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Low Elevation Angle Wind Measurements by FM-CW Radar,
W. C. Campbell, R. B. Chadwick, K. B. Earnshaw, and K. P. Moran. 1980, 6p Rept no. AFGL-TR-80-0310
Pub. in Conference on Radar Meteorology (19th), p722-726, 15-18 Apr 80.

No abstract available.

AD-A092 427/4 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Long-Term Measurements of C2n in the Boundary Layer,
R. B. Chadwick, and K. P. Moran. 9 Oct 79, 8p Rept no. AFGL-TR-80-0311
Pub. in Radio Science, v15 n2 p355-361 Mar-Apr 80.

No abstract available.

AD-A092 428/2 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Design of a Wind Shear Detection Radar for Airports,
Russell B. Chadwick, Kenneth P. Moran, and William Carroll Campbell. 9 Apr 79, 11p Rept no. AFGL-TR-80-0312
Pub. in IEEE Transactions on Geoscience Electronics, vGE-17 n4 p137-142 Oct 79.

No abstract available.

AD-A092 444/9 PC **A05**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Kinematic Features of the Large-Scale Mean State Phase II of Gate and Comparison with Phase III Features.
Master's thesis,
Robert Gordon Hughes. Aug 80, 89p Rept no. AFIT-CI-80-39T

Large-scale wind field features are presented for Phase II of the Gobal Atmospheric Research Program's (GARP) Atlantic Tropical Experiment (GATE) and compared with those of Phase III. GATE took place over western Africa and the tropical eastern Atlantic in 1974. Phase II was from 28 July to 17 August and Phase III was from 30 August to 19 September. Presented here are streamline and isotach analyses, derived horizontal winds, kinematic vertical motion, horizontal divergence, and vorticity including the vorticity budget terms. During Phase II, low-level circulation was dominated by convergence and cyclonic vorticity over land; however, over water, divergence dominated. This result and the related patterns of vertical motion seem to be a major difference between circulation features of Phase II and Phase III. Many investigators note that with regard to cloudiness, convection, rainfall, and wave organization and structure, Phase III was more active than Phase II. Comparisons of the analyzed and derived wind data and kinematic variables from this study and that of Vincent and Scott (1980) are made inan attempt to relate these differences in activity to the above findings.

PB81-132771 PC **A04**/MF **A01**
National Oceanic and Atmospheric Administration, Miami, FL. Research Facilities Center.
In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
Technical memo.,
F. J. Merceret, H. Davis, R. DeVivo, W. M. Lewis, and W. D. Mallinger. Sep 80, 69p NOAA/TM/ERL/RFC-6, NOAA-80110407

In-flight calibrations of the meteorological research aircraft at the Air Force Eastern Test Range during 1977 and 1978 are described. Results relating to the accuracy of selected meteorological instrumentation on the aircraft are presented. The instruments calibrated were the temperature, humidity and pressure sensors, the radar altimeters, and the wind finding system.

PB81-137788 PC **A03**/MF **A01**
National Oceanic and Atmospheric Administration, Rockville, MD.
The Lubbock, Texas, Tornado May 11, 1970. A Report to the Administrator.
Natural disaster survey rept.
Jul 70, 35p ESSA-NDSR-70-1, NOAA-79100904

On the evening of May 11, 1970, tornadoes were occurring in Wisconsin, Iowa, Kansas, Ohio, and

Texas, with the most massive tornado forming and touching down over the heart of Lubbock, Texas. In the few moments between 9:35 p.m. and the time the funnel lifted into the clouds, the tornado devasted the community along an 8 1/2 mile path. The tornado killed 26 persons and injured 1,500 more. More than 1,000 family units were totally destroyed and about 9,000 more damaged. Property damage was estimated at more than $125 million. Although the total Weather Bureau Community Warning System worked most effectively, the survey team tried to determine whether the Lubbock tornado had lessons for Federal, State, and local governments, and for the public. The survey team's findings and recommendations are presented in this report.

PB81-855470 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Jet Stream. June, 1970-June, 1980 (Citations from the NTIS Data Base).
Rept. for Jun 70-Jun 80,
Walter Van Put. Jun 80, 137p
NERACUSGNT0712
Sponsored by National Technical Information Service, Springfield, VA.

Studies of the jet stream are cited in relation to storms, atmospheric gravity waves, air pollutants, ozone layers, atmospheric convection, and others. The use of jet stream by aircraft is also included. (Contains 125 citations.)

5. BEHAVIORAL AND SOCIAL SCIENCES

5A. Administration and Management

AD-A091 884/7 PC **A10**/MF **A01**
Army Missile Command, Redstone Arsenal, AL. Technology Integration Office.
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
Management rept.,
Edward B. Dobbins, Jr. May 80, 206p DRSMI/RN-80-3-MR, AD-E950 034

This report is concerned with the aggregation of multiple rank-ordered research and development projects or product requirements. The resultant prioritized list serves as a resource allocation basis for the R&D projects. The rank orders are ordinal and without feedback or strategy. The extensive literature of the social choice field is structured and analyzed for this research. Building upon that foundation, this research classified the known majority-rule aggregation methods, evaluated them, and developed a model and computer code using the better methods to compute the aggregation of up to 100 rank-ordered lists of up to 100 alternatives. Decision-maker and alternative weighting may be applied by any of eight methods. Judge self-evaluation weighting is also available. Final rank-ordered priority lists of R&D projects are computed by the Borda, Adjusted Borda, and Shannon Majority-Rule methods. The preferred Shannon method handles complete, partial, and weighted rank orders without transitivity. Fuzzy set rank orders are compared. Kendall's coefficients of consistency and concordance evaluate the rank orders. The model is validated by comparative computation of many rank-ordered aggregation examples from the literature. (Author)

AD-A091 894/6 PC **A03**/MF **A01**
General Accounting Office, Washington, DC. Financial and General Management Studies Div.
Correct Balance of Defense's Foreign Military Sales Trust Fund Unknown.
3 Jun 80, 31p Rept no. GAO/FGMSD-80-47
Report to the Chairman, Committee on Appropriations, House of Representatives.

The Department of Defense does not have adequate control over foreign military sales accounting. As a result, it could not provide foreign governments with an accurate accounting for their funds deposited in trust accounts. Also, Defense could not determine the amount of money available for purchases of military goods and services by these countries. By comparing September 30, 1979, balances, GAO found that cash balances on trust fund records differed from balances on detailed sales case accounting records for all foreign military sales customers. In total, trust fund accounts differed by $1.5 billion from the detailed records of sales cases. This problem has continued because Defense has not made a concerted effort to determine why trust fund account balances did not agree with detailed accounting records. This report examines the reasons for these differences, recommends corrective action that can be taken quickly and reiterates the need for Defense to centralize accounting and disbursing functions. (Author)

AD-A092 054/6 PC **A07**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
Master's thesis,
Freddie L. McLaurin, Jr. 29 Nov 78, 132p Rept no. AFIT-CI-79-199T

Maintaining a high degree of readiness is a critical factor in the performance of the Air Force's Tactical Air Command (TAC) telecommunication mission. TAC's telecommunication is contained in its Tactical Air Control System (TACS). To maintain its desired status and adequately perform its mission, TAC must have a system of management which combines the sophistication and technology of its telecommunication environment with the intricacies and complexity of human interaction. The system must be flexible, priority-oriented, efficient and effective. The purpose of this thesis is to provide an analysis of Management by Objective (MBO) and its probable application as a management technique in TAC's telecommunication environment. MBO is discussed in detail so that the reader will have a sound understanding of the concept. The analysis effort is designed to examine possible problems related to implementation and operation that may assist in TAC's application of MBO.

AD-A092 178/3 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
A Case Study Anlaysis of a System Acquisition by a Field Activity.
Master's thesis,
David A. Sona. Jun 80, 140p

The formulation and execution of an acquisition strategy is a vital facet of the Government's process of acquiring goods and services. In this analysis, the researcher evaluates the strategy used by the Naval Supply Center Oakland to acquire the Naval Integrated Storage and Retrieval System (NISTARS), an automated inventory control warehousing system. The technical scope, project cost and system procurement technique used for the NISTARS project renders this acquisition very unique for a field activity such as NSC Oakland. This study contrasts selected traditional aspects of an acquisition strategy with those used by NSC Oakland to acquire NISTARS. Additionally, the lessons that NSC Oakland learned from their analysis of past automated inventory control acquisitions by other Department of Defense activities are presented. (Author)

AD-A092 250/0 PC **A08**/MF **A01**
Auburn Univ., AL. Dept. of Industrial Engineering.
Maintenance Productivity.
Final rept. 1 Oct 78-30 Sep 80,
Charles R. White. Sep 80, 169p AFOSR-TR-80-1175
Grant AFOSR-79-0016

This report presents a detailed accounting of a study to measure maintenance productivity and to explore how commanders can enhance this productivity at the Strategic Air Command 19th Bomber Wing at Robins A.F.B., Georgia. Utility models for the Deputy Commander for Maintenance and the Squadron Commanders of the Field Maintenance Squadron, Organizational Maintenance Squadron, Avionics Maintenance Squadron have been completed. Thosefactors which contribute most to maintenance effectiveness have been identified and the relative importance of each established. (Author)

AD-A092 321/9 PC **A08**/MF **A01**
Army Materiel Development and Readiness Command, Alexandria, VA.
Department of Defense In-House RDT&E Activities.
Management analysis rept.,
Harold F. Davidson. 30 Oct 79, 159p
Supersedes AD-A088 844.

Each In-House RDT/E activity of the Department of Defense is described on one page in this compilation. The data for 1979 are summarized in tables preceding the main text and charts and tables are provided for each service showing organizational relationships and command chains. All current DoD RDT/E activities which meet the report requirement of having at least 25 per cent of their budget in RDT/E funds are listed in the contents alphabetically within each department. Some T/E facilities which do not meet the requirement previously noted are also listed by special request. Organizational changes during FY 1979 appear in Appendix I. DoD instruction 7700.9 which has been the basis for this report since its inception has been replaced by a tri-service regulation, AR 70-63 NAVCOMPTIST 7044.5D, AFR 80-26, entitled DoD In-House RDTE annual activities report, 1 November 1978. Appendix II contains many of the definitions used in this report and are provided as an additional aid in use of the report. Appendix III lists selected abbreviations and acronyms. Appendix IV lists selected key words with page references. Every effort has been made to provide accurate information, particularly fiscal data. This year a new feature has been added. The Army Research Office, the Office of Naval Research and the Air Force Office of Scientific Research are shown for the first time.

AD-A092 401/9 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
A Study of Budget Formulation in the Fleet Marine Force.
Master's thesis,
William D. Johnson. Sep 80, 143p

A budget is a plan of action stated in monetary terms. It identifies how, why, and with what one will accomplish a mission. This thesis studies the budget formulation process in the Fleet Marine Force (FMF). Specifically, it studies the process in Continental United States and Hawaii based FMF units at the division, wing, and force service support group level. The budget formulation process for these units is examined in view of Navy/Marine Corps budget directives and 'preferred' budget practices for public organizations as discussed indicate that FMF budget organizations adhere to the majority of established budget practices. This study does, however, indicate several areas where improvement could be made such as developing more effective budget training programs, being more cognizant of the impact that timing has on budget quality, and reducing the personnel turnover problem caused by frequent rotation of the budget personnel in FMF organizations. Recommendations are provided concerning the improvement of the budget formulation process in these and other areas.

AD-A092 434/0 PC **A11**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Cost Impact Assessment of Cost Accounting Practice Changes.
Master's thesis,
James S. Anderson. Sep 80, 236p

This thesis represents the results of research on cost impact assessment of cost accounting prac-

tice changes to Cost Accounting Standards-covered contracts. The objectives of the research were to explore the current environment in which cost impact is measured and to develop a structured approach to aid the decision-maker in the assessment. The requirements of the Cost Accounting Standards and Administration of Cost Accounting Standards Clauses, the regulatory guidance available to Department of Defense contract administrators and the pricing methodologies utilized to assess cost impact were investigated. The Cost Accounting Standards administration process was modeled and utilized to construct a sequential, streamlined set of procedures with which the cost impact assessment process can be approached. A need for greater guidance from DOD on the process, an amendment to the Administration of Cost Accounting Standards Clause, a better system of tracking the Contract Universe and the introduction of flexibility into the choice of methodologies was recognized. (Author)

AD-B027 872/1 PC**$11.00***
Booz-Allen Applied Research, Fort Walton Beach, FL.
Program Planning and Appraisal Methodology.
Final rept. May 76-Jan 77,
James C. Whatley, and Cecil N. Bassham. Feb 77, 175p AFATL-TR-77-27
Contract F08635-76-C-0226
Distribution limitation now removed.

This document provides a summary of the planning processes currently employed by the DoD, USAF, and AFATL, the inter-relationships of these processes, and a description of the planning documents used at each level. A review of historical milestones in the development of the Planning, Programming, and Budgeting System from 1961 to 1973 is included as an Appendix. An appraisal methodology that instills rigor and enhances objectiveness in the planning process and that provides a documented corporate memory and audit trail is described. The use of the methodology is illustrated by an example of the appraisal process for selected Armament Laboratory programs. (Author)

PB81-132888 PC **A08**/MF **A01**
Department of Transportation, Washington, DC. Office of the Secretary.
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
Final rept. Aug-Dec 80,
Norman Bowls, Joseph Leo, Harold Deeley, Jr., Irving Glasser, and Alexander Hoshovsky. Dec 80, 165p DOT-M-80-1

The report summarizes a comprehensive review of the research and development (R&D) management process within the U.S. Department of Transportation (DOT) and how it compares with other Federal agencies (i.e., NASA, DOD, DOE, DOC and DOI). In addition, an in-depth analysis of DOT's R&D resource history is provided. The report consists of a summary analysis of DOT's R&D process and five monographs which focus on these issues; R&D policy development; R&D organizational development; project selection and evaluation; and Federal and DOT R&D resources. The report includes two models with which to assess the development of an agency's R&D management, organization and program review structures. Also included is an appendix which describes concisely, but in some detail, the R&D management processes of DOT and several other agencies (NASA, DOD, DOE, DOC and DOI).

PB81-851636 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Incentive Contracts. January, 1970-August, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Aug 80,
William V. Sassi. Oct 80, 89p
NERACUSGNT2034
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover pay and price standards, incentivization of the master ship repair contract, taxonomy of incentive approaches for stimulating innovation, escalation clauses in contracts, wages and implicit contracts, impact of incongruent goal incentives in award-fee contracting, contract expansion by performance incentives to achieve technological innovation, and the economics of incentive contracting. Government-industry cost-shared contracts are also included in this bibliography. (Contains 80 citations.)

PB81-851651 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Cost Benefit Analysis Methods. January, 1976-August, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Aug 80,
William V. Sassi. Oct 80, 150p
NERACEDBNT2044
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover cost effective improvements, considerations, approaches, and methods applied to various technologies, analysis of costs and benefits for power plant productivity improvement, use of benefit-cost analysis in establishing protection standards, and techniques for assessing benefits and cost effectiveness. (Contains 124 citations.)

PB81-851669 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Cost Benefit Analysis Methods. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Aug 80,
William V. Sassi. Oct 80, 115p NERACEI NT2044
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover the benefits and cost savings derived through group technology, indirect and intangible costs and benefits considerations, methodological concepts and issues involving costs, benefits, risk perception, and risk aversion, social cost and benefit analysis, comparing costs and benefits of technologies, and cost saving approaches to compliance with specific regulations. A cost benefit evaluation of the NASA Technology Utilization Program is also included in this bibliography. (Contains 116 citations.)

PB81-851677 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Cost Benefit Analysis Methods. January, 1972-August, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Aug 80,
William V. Sassi. Oct 80, 104p
NERACIAANT2044
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover cost reduction through manufacturing technology, NASA Technology Utilization Program, effective methodology to implement design to life cycle cost, the principles of cost benefit analysis of space technology and manufacturing facilities, considerations for the reduction of maintenance costs, and the impact of cost savings on motivating innovative techniques. (Contains 200 citations.)

PB81-851693 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Long-range Forecasting Methods. January, 1970-August, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Aug 80,
William V. Sassi. Oct 80, 108p
NERACUSGNT1938
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover methodology for predicting long-term performance from short-term testing, a survey of long-range forecasting models and data resources, measuring information content in long-range forecasts, a quarterly econometric model of the long-term structure of production, and long-range environmental, economic, health care, and strategic planning models. (Contains 82 citations.)

PB81-851909 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Aug 80,
William V. Sassi. Nov 80, 103p
NERACUSGNT2040
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover reports which provide necessary guidance for development of regulations or policies to limit emissions of harmful substances from manufacture of chemical products, determination of production and inventory policies pertaining to multi-product production, food and agriculture models for policy analysis and formulation, and study reports of industries to provide guidance in the formulation of manufacturing policies. (Contains 77 citations.)

5B. Documentation and Information Technology

AD-A092 024/9 PC **A03**/MF **A01**
Office of Naval Research London, (England).
European Scientific Notes. Volume 33, Number 5,
I. Kaufman, and Victoria S. Hewitson. 31 May 79, 49p Rept no. ESN-33-5

This is a monthly publication presenting brief articles concerning recent developments in European Scientific Research. It is hoped that these articles (which do not constitute part of the scientific literature) may prove of value to American scientists by disclosing interesting information well in advance of the usual scientific publications. The articles are written primarily by members of the staff of ONRL and occasionally articles are prepared by, or in cooperation with, members of the scientific staffs of the United States Air Force's European Office of Aerospace Research and Development and the United States Army Research and Standardization Group. Articles are also contributed by visiting Stateside scientists. (Author)

AD-A092 070/2 PC **A03**/MF **A01**
Martin Marietta Aerospace, Denver, CO. Denver Div.
Functional Capabilities Description (FCD) for the Corps Information Management System (CIMS).
Nov 78, 45p
Contract DAAK11-78-C-0102

Basic lunar and tidal data for Point Mugu, San Nicolas Island, and the Barking Sands area during 1981 are provided. The data presented are tidal data, times of moonrise and moonset, and times of lunar phases. (Author)

AD-A092 180/9 PC **A08**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Design and Implementation of an Integrated Screen-Oriented Text Editing and Formatting System.
Master's thesis,
Lisa Anne Talmage. Jun 80, 155p

Text editors and text formatters/processors are described. The state-of-the-art in text processing is examined. Design and implementation considerations in developing an interactive, integrated, screen-oriented text editing and formatting system are discussed. A Berkeley PASCAL implementation of such a system for a PDP-11 minicomputer under the UNIX timesharing system is presented. Intended system users are non-computer scientists, e.g. secretaries, business executives, engineers, students, etc. Programming experience is not required to utilize the system. (Author)

AD-A092 442/3 PC **A03**/MF **A01**
New York Univ., NY. Center for Science and Technology Policy.
Flow of Technology from the OECD to the U.S.S.R: A Feasibility Study,
Herbert I. Fusfeld. Jan 80, 38p FAR-30000

Contract DOS-1751-900429

This report (1) evaluates the feasibility for conducting a study of the relative value to the U.S.S.R. of technology obtained by direct exchanges with the U.S., and (2) discusses the availability, accessibility, and probable contribution of published and unpublished sources of information and data necessary to carrying out the project. Our conclusion is that the basic objective is indeed feasible, and the originally proposed program of value, for these reasons: (1) Adequate information is, or will be made, available; (2) The specific analysis recommended has not been previously performed; (3) Current research programs at other institutions are not addressing these specific questions; and (4) The results will provide a valuable basis for broader discussions and analyses. (Author)

CONF-801113-3 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Teaching the Originator to Make Whoopie.
1980, 16p
Contract W-7405-ENG-26
Annual practical conference on communications, Gatlinburg, TN, USA, 7 Nov 1980.

A small Word Processing (Whoopie) Center was established in March 1979, as part of the Engineering Technology Division (ETD), Oak Ridge National Laboratory. Reports preparation information revealed many training items for editors and word processors but none for informing the author. The ETD Word Processing Center has begun a series of sessions with each section in ETD to help originators become more familiar with the Center and its equipment. 5 figures. (ERA citation 06:001794)

ED-183 153 Not available NTIS
Dayton Univ., OH
An Instructional Module on Library Research,
Tom Rohmiller. 1977, 23p
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

Intended for college students whose library skills are inadequate for research at the university level, this self-instructional module introduces the user to bibliographies both conceptually and practically; i.e., what makes up a bibliography, how to use a bibliography, and how to compile a bibliography. The module has four sections: (1) bibliographies--definitions, (2) the card catalog as bibliography, (3) the periodical indexes as bibliographies, and (4) the search strategy and working bibliography. Each concludes with a set of short exercises, the answers to which are provided at the end.

ED-183 154 Not available NTIS
Winthrop Coll., Rock Hill, SC.
An Inventory to the Records of the 1977 South Carolina International Women's Year Conference.
1979, 8p
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This inventory describes the records of the 1977 South Carolina International Women's Year Conference which, as part of the archives and special collections of Winthrop College's Dacus Library, are available for research. Included in the collection are minutes, correspondence, financial records, resolutions, newspaper clippings, publications, press releases, brochures, questionnaires, speeches, tape recordings, and other records.

ED-183 158 Not available NTIS
National Arts and the Handicapped Information Service, New York.
Materials from the National Arts and the Handicapped Information Service: Annotated Bibliography. Second Draft.
Nov 78, 32p
Sponsored in part by American Telephone and Telegraph Co., New York; and National Endowment for the Humanities, Washington, DC.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This annotated bibliography describes media and materials on the subject of arts and handicapped persons, including books, recordings, films, and materials transcribed in braille and large print. Only materials produced since 1970 are listed; the many articles, magazines, and dissertations that were published in this period are not included. Sections of the document are Reviews of Printed Materials, Bibliographies (which enable searchers to locate older editions of materials), Library of Congress National Library Service for the Blind and Physically Handicapped, Music, Recorded Materials, Media, Films for the Deaf and Hearing Impaired People, and Mixed Media. Five organizations that provide custom bibliographies for a fee are also listed.

ED-183 160 Not available NTIS
Literacy Volunteers, Inc., Syracuse, NY.
National Endowment for the Humanities Bibliography of Humanistic Reading for Grade Levels 1-8.
Jul 79, 110p
Sponsored in part by National Endowment for the Humanities, Washington, DC.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

Compiled for adults who have come late in life to reading, this bibliography is intended to add a humanistic dimension to their basic reading skills; it has been developed on the premise that mere coping skills are not enough for the adult reader. This cooperative program of librarians and literacy volunteers has assembled titles that range across the arts, literature, philosophy, law, history, religion, and the social and behavioral sciences. Skill levels encompassed by the bibliography are grade levels five through eight. Field testing of a sample of 30 books by students and tutors at five participating libraries indicates an increase in both student and tutor understanding and appreciation of the humanities.

ED-183 161 Not available NTIS
The OCLC Serials Sub-System: A First Evaluation,
Neal L. Edgar. 1978, 41p
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This examination of the OCLC serials control subsystem points to positive and negative aspects of the OCLC system as they relate to serials, and evaluates the system's serials cataloging capabilities. While this report assumes a knowledge of the basic operations of OCLC, it describes the system in general, its function in cataloging, and its serials check-in component, concluding that no widely accepted evidence exists to prove that the OCLC serials sub-system is any faster than a well-run manual system. Illustrations include diagrams of the OCLC database and examples of system functions.

ED-183 162 Not available NTIS
Holmes County School District, Lexington, MA.
On-Site Library Training Program for School and Community in an Economically and Culturally Deprived County.
1979, 353p
Grant OEG-007800597
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This training manual documents planning and procedures employed in the development of a coordinated, comprehensive, year-long inservice library training program designed to stimulate and motivate the habit of library usage by students and teachers in the rural poverty area of Holmes County, Mississippi. Participants in the program included students, teachers, administrators, instructional aides, media aides, public librarians, college librarians, school library media specialists, and community members. This manual provides outlines for each of the 40 sessions, emphasizing the planning aspects of the program, and especially the communications employed in establishing dates, times, goals, objectives, activities, performance indicators, and publicity. Appendices provide a discussion of evaluation procedures and findings, as well as samples of publicity, promotion ideas, and awards, and lists of supplementary materials and consultants.

ED-183 163 Not available NTIS
Southwestern Library Association, Stillwater, OK.
Planning Library Programs,
Peggy O'Donnell, and Patsy Read. 1977, 55p
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

Intended for public libraries that have not yet sponsored programs for the adult community, this manual describes the steps in designing and staging programs designed to bring together local citizens, public policy makers, and scholars in the humanities to discuss issues of concern to their state or community. Sections are devoted to the National Endowment for the Humanities (NEH), planning your program, the planning group, building an audience, turning themes into programs, evaluation, proposal writing, staging the program, publicity and promotion, and the aftermath of the program. A brief bibliography and a list of six NEH state-based committee addresses and themes are included.

ED-183 166 Not available NTIS
State Univ. of New York at Albany. Univ. Libraries.
Reference Materials in Criminal Justice: A Selective, Annotated Bibliography,
Anne Dowling. Oct 79, 21p
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This annotated bibliography is a selected guide to materials in the field of criminal justice that are available in the reference collections of the University Libraries at the State University of New York at Albany. The listing covers materials related to the topics of crime, juvenile delinquency, the criminal justice system, and penology; criminal law and procedure are not covered. Containing more than 100 entries, the bibliography is divided into four sections: indexes and abstracts, bibliographies, dictionaries/directories, and general works. Each section is arranged alphabetically by main entry with a limited number of cross references. Entries provide author (if applicable), title, publication information, area location information, classification number, and a brief annotation. Holdings information is also given for all indexes and abstracts, and publications of the federal government are included.

ED-183 169 Not available NTIS
Northern Virginia Training Center for the Mentally Retarded, Fairfax.
A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
Final rept.,
Margaret Ownby, and Sonja Braun. 1 Nov 79, 106p
Grant OEG-007801812
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

Moderate success of individualized programs for severely and profoundly mentally retarded persons in a library setting is documented in this report. These programs were developed following a survey tabulation and analysis of individual education programs, individual program plans, programs assessment chart profiles, and psychological and speech evaluations. Areas selected for the target group of 30 persons included fine-motor skills, attention span, communication skills, and cognitive skills. This report includes data on subject performance over the course of the project, as well as a description of the types and scope of the library programs administered. Appendices provide guidelines developed for library volunteers that participated in the project, a list of materials used, curricula, baseline data, a list of reinforcements used, a program narrative report for each subject, the questionnaire used for staff, and volunteer evaluations.

ED-183 170 Not available NTIS
New York State Library, Albany.
A Guide to Dutch Manuscripts Relating to New Netherland in United States Repositories,
Charles Gehring. 1978, 148p
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

Intended to furnish researchers with the location of source material relating to New Netherland, this guide describes the documents and collections held by United States repositories and provides accessibility to them by noting available printed or manuscript translations and indicating whether copies of the originals have been collected for the New York State Library. The time period covered by the materials cited in the guide extends from the earliest years of Dutch West India Company activity in New Netherland to the final relinquishing of control of the territory to the English in 1974; all documents are manuscripts, with one exception, and all are in Dutch (except for some English notations and endorsements entered later). Organized in a fashion similar to Hamer's 'Guides to Archives and Manuscripts in the United States,' this guide lists the repositories in alphabetical order by state; the documents in each repository are listed in chronological order. Each entry begins with a key word followed by a brief description of the essential information in the document. The data of the document and the repository's identification number or code are given, and information on translations and available copies of the document is provided. A list of abbreviations and an index are included in the guide.

ED-183 199 Not available NTIS
Illinois Univ. at Urbana-Champaign. Dept. of Secondary Education.
Documentation--INFO: A Small Computer Data Base Management System for School Applications. The Illinois Series on Educational Application of Computers, No. 24e,
John Cox. 1979, 109p
For related documents, see IR 008 123-140, and IR 008 144. Sponsored in part by EXXON Education Foundation, New York.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This paper documents the program used in the application of the INFO system for data storage and retrieval in schools, from the viewpoints of both the unsophisticated user and the experienced programmer interested in using the INFO system or modifying it for use within an existing school's computer system. The opening user's guide presents simple instructions with examples for using the INFO system to store data and search for certain entries. The programmer's guide covers size of files and necessary memory to use the programs, as well as the time it takes to run the programs; and a conversion guideline is included to explain those BASIC commands which are not always available on other microcomputer systems. A section on each program presents the program listing, the function of each variable, and suggestions for modifications which might be desirable for other applications.

PB81-122988 PC **A04**/MF **A01**
Federal Lab. Consortium.
The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
P. Thomas Stiko. 1 Feb 80, 57p NSF/RA-800263
Grant NSF-ISP78-22221
Prepared in cooperation with San Diego Science and Technology Action Center, CA.

The Energy Link Project, through the development of a simplified resource/technology locator system, has improved the accessibility and usability of a vast storehouse of available resources from the Federal Laboratory System in the energy field. This locator system was designed from the point of view of local government management. This orientation allows the user to identify his needs and then pull the available resources applicable to alternative solutions from the Federal Laboratory System. The cooperative approach utilized between the Federal Laboratory Consortium for Technology Transfer (FLC) representing the technology source and the Science Technology Application Center (SANDTAC) representing the local government user has resulted in a system that is compatible and usable within both institutional areas.

PB81-125304 PC **A04**/MF **A01**
Federal Lab. Consortium.
National Resource Center Operational Feasibility and Use Study, Volume 1,
D. M. Delabarre. Jul 80, 56p NSF/RA-800270
Grant NSF-ISP78-22221
See also Volume 2, PB81-125312. Prepared in cooperation with Southwest Innovation Group, Inc., Pasadena, CA.

This volume provides information concerning the operational feasibility, organizational and financial considerations of a National Resource Center (NRC) concept, and explores alternative modes of operation. The major goal of NRC is to create a common ground for both public and private sectors to access technology experts in a problem-solving mode. The findings of a feasibility and use study for the implementation of NRC are summarized. Based upon these results, recommendations are presented for consideration. Also described is the establishment of a baseline NRC concept used throughout the study. The appendices include conference reports, a discussion paper on the NRC operational concept, and science and technology coordination input from the Federal Laboratory Consortium (FLC) for Technology Transfer.

PB81-125312 PC **A04**/MF **A01**
Federal Lab. Consortium.
National Resource Center Operational Feasibility and Use Study, Volume 2, Appendix D,
D. M. Delabarre. Jul 80, 61p NSF/RA-800271
Grant NSF-ISP78-22221
See also Volume 1, PB81-125304. Prepared in cooperation with Southwest Innovation Group, Inc., Pasadena, CA.

This volume provides information concerning the operational feasibility of a National Resource Center (NRC) concept. The purpose of NRC is to provide a common ground for both public and private sectors to access technology experts in a problem-solving mode. This volume, comprising Appendix D, includes an outline of a proposal called the Cooperative Technology Program by the U.S. Department of Commerce. A major portion of this report consists of excerpts of a thesis, 'A Regional Center for Utilization and Transfer of Technology' by P. S. Hughes and M. H. Olsen of the Naval Postgraduate School in Monterey, California. The paper describes such a center, its organization, cost estimates of operation, and a demonstration project. It proposes the establishment of the center based on a review of the literature, a study of existing technology transfer organizations, and discussions with experts in technology transfer. Some critical parameters considered in the design criteria are presented. The appendices include a list of technology transfer organizations, models of technology transfer, and regional center functions and activities.

PB81-125825 PC **A09**/MF **A01**
Midwest Research Inst., Kansas City, MO.
Environmental Assessment Data Systems User Guide: Project Profile System.
Final rept. Aug 79-Apr 80,
J. P. Reider. Jun 80, 195p EPA-600/8-80-031
Contract EPA-68-02-3177

The report is a user guide to the Project Profile System (PPS), a computerized data base on projects of various types that pertain to specific industrial categories. PPS is one of five data bases which are components of the Environmental Assessment Data Systems (EADS), designed to aid researchers in environmental assessment, emissions characterization, and control technology development. PPS contains data from nine general projects: source monitoring; integrated assessment; transport, transportation, and fate; socioeconomics; sampling methods development; fuels; control technology; ecological effects; and health effects. Each project described in the PPS is identified by its sponsor, contractor, and other administrative information. The PPS contains an abstract of each project reported in text form and lists pertinent references. The specific data in the PPS depends largely on the type of project being reported; however, sufficient detail is available to report on a particular pollutant being sought or identified during the project. The PPS does not give results (e.g., pollutant concentrations, process data); it tells what the project involved. The guide gives detailed instructions for encoding PPS datasets, defines procedures for submitting and retrieving data, and contains standard nomenclature to facilitate data encoding. The guide also discusses procedures to access PPS.

PB81-132870 PC **A04**/MF **A01**
National Bureau of Standards, Washington, DC.
Data Bases Available at the National Bureau of Standards Library,
Diane Cunningham. Oct 80, 69p NBSIR-80-2133
See also report dated Mar 79, PB-293 170.

An alphabetical listing of data bases available online at the National Bureau of Standards (NBS) Library is listed by either acronym or full title of the data base. Other additional information includes description of the data base, period of coverage, producer(s), corresponding hard copy, principal sources and vendors. A general subject and a cross reference index to the data bases is also supplied.

PB81-139230 PC **A03**/MF **A01**
National Training and Information Center, Chicago, IL.
Summary of Findings on Home Mortgage Disclosure Act (HMDA) Data Users.
Dec 79, 46p HUD-0001506
Contract HUD-H-5106

This summary of a survey of Home Mortgage Disclosure Act (HMDA) data users consists of tabular data, containing no descriptive or narrative material. An alphabetical listing of States is subdivided by cities and names of organizations or agencies operating there. Information is recorded for each of the latter comments on use of data, area studied, number of reports used or collected, data given to other groups, type of group, and year of activity. For example, listed under Oakland, Calif., is the United Neighbors in Action. This agency used the HMDA data in helping to develop a linked deposit program for the county in connection with a lawsuit. The area studied was the county, the number of reports used or collected was 35, and the data was given to other groups. The type of group is described as a community organization and the years of activity were 1977 - 78. Similarly, Trinity University Urban Studies is listed under San Antonio, Tex. The university used the data for an analysis of the city in 1976 - 77 and used or collected 30 reports, which were shared with other groups. Approximately 220 data users are reported. The number of groups listed under each State range from 2 in Alaska to 19 in California and 22 in New York.

PB81-855348 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Engineering Information Systems. June, 1976-May, 1980 (Citations from the Energy Data Base).
Rept. for Jun 76-May 80,
William V. Sassi. Aug 80, 34p
NERACEDBNT0433
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography describe and analyze various engineering information systems currently in operation. Among the information and data bases discussed are Westinghouse Hanford Company information system, Air Force information system and the Energy data base. (Contains 25 citations.)

5C. Economics

AD-A091 963/9 PC **A06**/MF **A01**
Kaitz (Edward M.) and Associates, Inc., Washington, DC.
Overhead Costs and Rates in the U.S. Defense Industrial Base. Volume 1.
Final rept. Jan 79-Dec 80,
Edward M. Kaitz. Oct 80, 122p Rept no. EMK-80-2-VOL-1
Contract N00014-80-C-0274

This document investigates and analyzes the elements of overhead cost structures for major

weapon systems. The investigation of overhead costs and rates was based on Department of Commerce data from 1961-1977 for 72 major U.S. industries as defined by their 4-digit SIC (Standard Industrial Classification) number. For the specific purpose of this analysis, 21 of the 72 industries were examined closely. These 21 industries make up a major part of the defense industrial base and include both the major weapon builders and their supplier industries. Based on the collected data, overhead costs were defined as all costs including profit other than direct labor and direct material costs incurred by a corporation in doing business. The overhead rate was defined as overhead costs divided by direct labor costs. Although overhead as it is defined in this report is a simplification of how overhead is determined within the corporate sector, the definitions of overhead rates and costs which are used are consistent with the concepts of variable and fixed costs as they are normally defined by economic theory. The purpose of this project was to establish analytical benchmarks and techniques for the military Program Manager rather than to establish rigidly defined cost accounting structures.

AD-A092 242/7 PC **A05**/MF **A01**
Assistant Secretary of the Navy (Manpower, Reserve Affairs and Logistics), Washington, DC.
EEO External Relevant Labor Force Analysis.
Research rept.,
D. M. Atwater, R. J. Niehaus, and J. A. Sheridan.
Sep 80, 90p Rept no. OASN(M/RA/L)-RR-37

This report concentrates on the technical issues of estimating relevant labor markets by race, or national origin and sex (RNS) groups. The data on the external populations for the relevant geographic areas is evaluated to identify persons 'available' to undertake Navy civilian jobs. Included are an initial set of RLF data for the local and national U. S. civilian labor markets of the Department of the Navy. (Author)

PB81-120149 PC **A12**/MF **A01**
Bureau of Economic Analysis, Washington, DC. Interindustry Economics Div.
The Detailed Input-Output Structure of the U.S. Economy: 1972. Volume II. Total Requirements for Commodities and Industries, 1972. Part I. Commodity-by-Commodity Total Requirements, 1972. Part II. Industry-by-Commodity Total Requirements, 1972.
1979, 266p
See also Volume 1, PB80-207921.

Volume II contains two total requirements tables. Table 4, Commodity-by-Commodity Total Requirements, 1972, shows the direct and indirect effects of final demand on commodity output. Each column of table 4 shows the production required directly and indirectly of the commodity named at the beginning of each row per dollar of delivery to final demand of the commodity named at the head of the column. Table 5, Industry-by-Commodity Total Requirements, 1972, shows the production required both directly and indirectly of the industry named at the beginning of each row per dollar of delivery to final demand of the commodity named at the head of the column. In the tables, the individual industries and commodities and each of the final markets are identified by numerical code.

PB81-124398 MF **A01**
Department of Commerce, Washington, DC.
Business America - The Journal of International Trade, Volume 3, Number 24, December 1, 1980.
Bi-weekly pub.
1 Dec 80, 45p
See also Volume 3, Number 22, PB81-115156.
Paper copy available from Supt. of Docs.

Contents:
President's export council offers final report;
U.S. products popular with Chinese buyers;
Washington trade briefs;
Memphis in May festival salutes Egypt;
Business outlook abroad;
Economic highlights;
Worldwide business opportunities.

PB81-124521 PC **A15**/MF **A01**
Research Group International, Charlottesville, VA.
Study of Liability, Insurance and Indemnification Problems for FRA Programs.
Final rept.
Jun 79, 327p
Contract DOT-FR-74300

The report presents the findings, conclusions and recommendations of an extensive six-month study of liability, insurance and indemnification problems in certain FRA programs. To assemble this information, interviews were conducted, extensive legal research was performed, relevant literature was surveyed. Final recommendations include hiring of an insurance broker, statutory authority to indemnify R&D contractors, use of self-insurance and claim servicing organizations, and limitations on conduct of R&D projects outside the TTC. Attention is paid to: aspects of FRA R&D programs which may give rise to liability; the feasibility of various insurance and indemnification approaches; FRA potential liability for acts of contractors; loss experience projections; and estimates of premium rates.

PB81-125387 PC **A06**/MF **A01**
Pennsylvania Univ., Philadelphia.
Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.
Final rept.,
Edwin Mansfield. 1978, 105p NSF/PRA-7510163/1

The final report is composed of three main parts. A paper entitled 'Foreign Trade and U.S. Research and Development', considers questions concerning (1) the percentage of the total returns from U.S. firms' research and development projects stemming from foreign markets or foreign utilization; (2) the extent U.S. research and development expenditures would decline if U.S. firms could not utilize various channels to transfer and exploit their technology abroad; (3) the relation of characteristics of a firm's research and development portfolio to the extent of its foreign sales; and (4) the extent U.S. research and development firms actually do use various channels (foreign subsidiaries, exports, licensing, joint ventures) to transfer their technology abroad. A paper entitled 'Overseas Research and Development by U.S.-Based Firms' examines the minimum economic scale for an overseas laboratory, the types and value of laboratory work performed overseas by U.S. firms, the amount of overseas expenditures in the past, present, and future, and a cost comparison of performing research and development work in the U.S. and overseas. Sample questionnaires provide an example of how the basic data were obtained in these studies.

PB81-125544 PC **A03**/MF **A01**
Northeast-Midwest Inst., Washington, DC.
Moving from Reaction to Anticipation in U.S. Import Policies.
Research rept.,
Peter Tropper. Oct 80, 45p EDA/ERD-80-168
Grant EDA-ERD-699-G-79-33

The report reviews and compares the import and export policies of the U.S. and Japan. The report characterizes U.S. import policies as being reactive while Japanese policies are described as anticipatory. The Trade Act of 1974, the Tokyo Round, the Trade Agreement Act of 1979, and the EDA Trade Adjustment Assistance Program are discussed and critiqued. The report recommends that Congress convert U.S. import adjustment programs to sectoral adjustment policies.

PB81-125635 PC **A04**/MF **A01**
Planologisch Studiecentrum TNO, Delft (Netherlands).
Bereikbaarheid als Vestigingsplaatsfaktor voor Bedrijven (Attainability as a Location Factor for Industry),
G. Slob. Oct 76, 56p
Text in Dutch.

The document is a short summary/reproduction of an earlier report from a research study. Main purpose of this study work is to give insight into the importance of the location factor attainability by the choice of a location by a company. Secondly, the study aimed at making a classification of companies based on a number of relevant aspects for the traffic production and traffic attraction.

PB81-126039 PC **A06**/MF **A01**
Urban and Rural Systems Associates, San Francisco, CA.
CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
Manual rept. Apr 79-Sep 80,
Patricia F. Kelly, Ernest J. Fazio, and Sally Jo Jones. Sep 80, 109p URSA-77-17, DLMA-20-06-78-07-1
Contract DL-20-06-78-07
See also Volume 2, PB81-126047.

The manual represents one product of a research and development study commissioned by the Office of Policy Evaluation and Research (OPER) of the Department of Labor. The study examined the relationship between CETA Title III Indian programs and Indian reservation economic development on twenty-five Indian reservations and Native Alaskan communities nationwide. During the study a wide range of materials was collected, and interviews were conducted with over 400 persons. The study analyzed the relationships between the CETA programs and the EDA, HUD, BIA, IHS, USDA, etc. funded economic development activities, and provided a perspective on the state of reservation economic development.

PB81-126047 PC **A08**/MF **A01**
Urban and Rural Systems Associates, San Francisco, CA.
CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
Manual rept. Apr 79-Jul 80,
Ernest J. Fazio, Jr., Patricia Kelly, and Sally Jo Jones. May 80, 152p URSA-77-17, DLMA-20-06-78-07-2
Contract DL-20-06-78-07
See also Volume 1, PB81-126039.

The handbook highlights a number of exemplary uses of CETA funds in reservation economic development, presents a discussion of the problems reservations may face in meeting the new funding directions of the federal government, and suggests some ways in which reservation and consortium-based Native American CETA grantees can deal with those problems and participate in economic development in the 1980s.

PB81-128852 PC **A05**/MF **A01**
Georgia Univ., Athens. Coll. of Business Administration.
Financial Needs of Small Minority Firms.
Final rept.,
William C. Hunter. Sep 80, 84p
Contract SBA-2643-OA-79

Using techniques of modern theory, the researchers have derived optimal time paths for the financing/investment decisions of minority firms during each stage of their life cycle. These optimal patterns are compared to patterns for non-minority firms. Permanent gaps are characterized and recommendations are made for public policy.

PB81-128936 PC **A08**/MF **A01**
Little (Arthur D.), Inc., Cambridge, MA.
Study of the Slate Mining Industry of Vermont/New York.
Open file rept. (Final) 28 Sep 79-15 Oct 80,
W. I. Watson, E. Ohlsson, C. E. Shorey, R. J. Miller, and A. J. Whittier. 15 Oct 80, 172p ADL-C-83918, BUMINES-OFR-125-80
Contract J0199075

The report presents results of a comprehensive analysis of the slate industry in Vermont-New York carried out to identify the present and future problems that are constraining the growth of the industry and to propose solutions to those constraints. All factors relevant to the industry's present and future status, such as markets and marketing techniques, competition from other producers both domestic and foreign, Federal and State regulations affecting the industry, quarrying and processing technologies, slate resources and reserves, and industry structure and economics were considered.

PB81-132243 PC **A09**/MF **A01**
Cornell Univ., Ithaca, NY.

The Overtime Pay Provisions of the Fair Labor Standards Act,
Ronald G. Ehrenberg, and Paul L. Schumann. 15 Oct 80, 200p
Contract DL-J-9-M-9-0195
Portions of this document are not fully legible.

It has long been recognized in the U.S. that excessive use of overtime hours may be partially responsible for continued high rates of unemployment. For although a large proportion of overtime hours is due to disequilibrium phenomena, such as rush orders, seasonal demand, mechanical failures, and absenteeism, a substantial amount of overtime appears to be regularly scheduled. If even a fraction of this overtime could be converted to new full time jobs, the effect on the unemployment rate might be substantial. For example, in 1977, average weekly overtime hours in manufacturing were 3.4 hours/employee; if one-fifth of this could have been eliminated and converted into new full time jobs, production worker employment levels would have risen by 1.7 percentage points.

PB81-139032 PC **A03**/MF **A01**
Purdue Univ., Lafayette, IN.
Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency,
Patric H. Hendershott, and Sheng Cheng Hu. Dec 79, 33p HUD-0001415
Grant HUD-H-2987

This paper estimates the gains from both expected and unexpected inflation for homeowners in different marginal tax brackets for different periods during the last 15 years. It also draws some implications of these gains for economic stabilization and efficiency. For houses held for various 6 - year periods between 1964 and 1978, real annual rates of return exceeded expected real returns by 3.5 to 9.5 percent. Expected inflation lowers the user cost of capital for owner - occupied housing; the higher the investor's tax bracket, the larger the reduction and the greater the demand for housing. At expected late 1978 inflation rates, the user cost of capital for those in high tax brackets is only 5 percent, compared to over 20 percent for corporate investments in structures. Favored tax treatment of owner - occupied housing causes significant productivity losses for the economy. Substitution of a tax credit for mortgage interest and property taxes and cessation of the double taxation of corporate income would produce a more efficient U.S. capital stock allocation. Preventing further acceleration of inflation would allow the value of corporate equities, which has been depressed for the last decade, to reflect the replacement costs of real corporate assets. This would reduce the misallocation of real capital. Much concern about rising housing costs seems to be based on measuring nominal, before - tax costs rather than real, after - tax costs. If the mortgage interest component of the consumer price index was computed appropriately, this index's rise between 1973 and 1979 would be 40 percent rather than the reported 55 percent. The annual inflation rate has been overstated by 2 percent throughout the last business cycle. Tables, a chart, footnotes, and 19 references are included.

PB81-139248 PC **A03**/MF **A01**
Peat, Marwick, Mitchell and Co., Washington, DC.
Study of Loan Management Operations.
Summary rept.,
19 Jun 79, 37p HUD-0001529

This report summarizes a study of HUD's loan management operations. The study goal was to develop a system for use by HUD field office loan management branches in monitoring mortgagors' and mortgagees' performance, providing technical assistance, performing workouts, and developing modification agreements for multifamily projects. The study was prompted by concern that recognized weaknesses in loan management procedures, coupled with efforts to increase production of insured multifamily units, could lead to higher default rates and strains on the HUD insurance fund. The study focused on intended and actual management functions, the design and specifications of the model system, and specification of the model system's implementation requirements. The review of intended goals, procedures, and staff skill requirements showed that little written guidance was provided to HUD central or field offices. Increased loan management capacity and implementation of a well - defined management process were found to be the first steps needed to change loan management to a proactive system. Goals of the proposed new system are to overcome the current weaknesses and to provide an integrated process for managing multifamily projects from initial application for HUD insurance to final payment of the mortgage or other project disposition. Key features of the proposed system include project risk analysis during the approval process as a basis for caseload allocation, formal linkage of a project underwriter and a loan servicer, and division of the loan management branch into separate units for compliance monitoring and for technical assistance. Other system features and advantages, figures, and an appendix discussing issues related to loan management's capacity to perform are presented.

PB81-139271 PC **A06**/MF **A01**
Copley International Corp., La Jolla, CA.
Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
Marian O. Doscher. Dec 78, 122p HUD-0001541
Contract HUD-H-2338R

This last volume of an eight - volume study of mortgage credit availability in urban and rural areas describes survey methodology. These surveys were conducted to provide data for the analysis of mortgage credit availability in urban and rural areas. One survey was of homeowners who had purchased single - family detached dwelling units between January 1976 and July 1977. A total of 500 sample units was drawn from the tax assessment records in 4 matched urban and rural areas: Harrisburg, Pa.; Mobile, Ala.; San Diego, Calif.; and Springfield, Ill. The urban area was defined as the central city of the Standard Metropolitan Statistical Area while the rural area was made up of communities having populations between 1,000 and 20,000 persons. Study areas were chosen to represent diverse rural populations. The second survey was of mortgage lenders in the same geographical areas. In general, all data were collected to fulfill econometric modeling requirements. Telephone interviews were conducted, and although refusal rates were high in about half of the urban or rural areas completed responses were at or above 50 percent. The survey of lenders was conducted on a face - to - face basis by senior survey researchers. After the survey data were coded, tabulations for the case studies were completed using the Statistical Package of the Social Sciences. Tables, figures, and footnotes are provided. (Author abstract modified).

PB81-139289 PC **A10**/MF **A01**
Copley International Corp., La Jolla, CA.
Study to Indentify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part II: Appendix 1, Home Owner Questionnaire.
Dec 78, 220p HUD-0001542
Contract HUD-H-2338R

This is the homeowner survey questionnaire appended to the last volume on survey methodology of an eight - volume study of mortgage credit availability in urban and rural areas. One questionnaire is presented for each urban and rural area. The mean, median, or proportion of respondents replying to each is shown in each answer space on the questionnaire. Thus, differences in responses between an urban area and its matching rural area can be compared for a specific question. Symbols representing sample size and data as well as type of response are used uniformly throughout the questionnaire. Unless indicated by 'n,' the sample size is the total number of respondents shown on the first page of each questionnaire. 'Don't know' and refused response percentages are based on the number of respondents for each question, rather than the total, and were not included in percentage breakdowns. (Author abstract modified).

PB81-139297 PC **A05**/MF **A01**
Copley International Corp., La Jolla, CA.
Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part III: Appendix 2, Lending Institution Questionnaire.
Dec 78, 100p HUD-0001543
Contract HUD-H-2338R

This is the lender survey questionnaire appended to the last volume on survey methodology of an eight - volume study of mortgage credit availability in urban and rural areas. One questionnaire is presented for each urban and rural area. The mean, median, or proportion of respondents replying to each question is shown in each answer space on the questionnaire. Thus, differences in responses between an urban area and its matching rural area can be compared for a specific question. Symbols representing sample size and data as well as type of response were used uniformly throughout the questionnaire. (Author abstract modified).

PB81-139305 PC **A03**/MF **A01**
Bureau of Economic Analysis, Washington, DC. Regional Economic Analysis Div.
Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
Kenneth Ballard, Joseph Cartwright, Richard Gustely, and John Kort. 10 Apr 80, 35p HUD-0001545
Contract HUD-H-2979

The research reported here was undertaken to determine the feasibility of linking two modeling systems, the National - Regional Impact Evaluation System (NRIES) and the Regional Industrial Multiplier System (RIMS), into a single spatially comprehensive and interactive system for State and substate areas. Such a system is needed to trace the impacts of region - specific Federal programs on the remainder of the economy, in addition to the required estimation of the program impacts in the particular area under study. NRIES is a spatially interactive econometric model of the United States which is composed of separate models for each of the States and the District of Columbia. The RIMS is an input - output model designed to provide industry specific - estimates of policy impacts for any county or group of counties in the United States. The latter is capable of producing small - area impacts with substantial industrial detail, while the former can produce spatially disaggregated impacts for the entire Nation. A linkage between the two was felt to be more an economical than a costly effort to devising a complex single model with the same objectives. This project report gives detailed descriptions of essential features of both models. The linking methodology is presented in a test application, with specific attention paid to the implementation of the methodology, as well as results of this test application, and an analysis of the spatial distribution of impacts associated with the actual expenditures of the local public works program in the Denver Standard Metropolitan Area in 1977. Finally, an overall assessment of the feasibility of the approach is made, with a specific discussion of the compatibility of the two modeling systems. Charts, formulas, and tabular material are provided.

PB81-851727 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Profit Performance. January, 1970-August, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Aug 80,
William V. Sassi. Oct 80, 93p
NERACUSGNT1929
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover a study of the effects of task goal and schedule choice on productivity and profits, the effects of training programs on earnings and profits, the value of improved forecasts of production, and the influence of market structure on the profit performance of manufacturing companies. (Contains 72 citations.)

5D. History, Law, and Political Science

AD-A092 156/9 PC **A04**/MF **A01**
RAND Corp., Santa Monica, CA.
The Security of Pakistan: A Trip Report.
Interim rept.,
Francis Fukuyama. Sep 80, 57p Rept no. RAND/N-1584-RC

This note, a companion to N-1579, is based on a trip to Pakistan in mid-1980 and reflects conversations by the author with numerous high-ranking Pakistani military officers and civil servants. Pakistan faces a severe threat on its eastern border as a result of the Soviet invasion of Afghanistan, both as a result of Soviet support for ethnic separatism and from conventional Soviet operations against Afghan guerrillas based in Pakistan. This comes at a time when Pakistan is falling far behind India in terms of military capability both quantitatively and qualitatively. The American aid offer of March 1980 was deemed insufficient to begin to meet the spectrum of threats posed by the Soviets and their clients, while at the same time provoking Moscow and India. Nonetheless, the Pakistani military remains strongly pro-Western and would like to play a role in a larger American security arrangement for South Asia and the Persian Gulf. (Author)

AD-A092 201/3 PC **A02**/MF **A01**
Army War Coll. Strategic Studies Inst., Carlisle Barracks, PA.
Economic Sanctions in the 1990's,
Donald L. Losman. 30 Oct 80, 16p

Economic sanctions are a tool employed to achieve particular political objectives. The 20th century experience with formal economic sanctions leaves considerable doubt about the efficacy of these measures. This paper points out, however, that historical lack of success with sanctions does not mean that this tool will not be used in the 1990's. Inherent in the use of sanctions are several military implications. First of all the failure of sanctions can lead to implementing stronger measures such as blockades and search and seizure. If the sanctions are effective, then they could be responsible for internal strain which could lead to revolution or a declaration of war. The use of sanctions requires the user to keep in mind his objectives and to have thoughtout the follow-on actions both when the sanctions are effective and when they are not. Economic sanctions are formalized trade and financial penalties inflicted upon target nations for the purpose of coercing the latter into practices and behavior more in accord with the desires of the boycott-imposing governments. They are, in short, a nonmilitary form of coercion designed to obtain specific or generalized foreign policy objectives. American sanctions against Cuba, for example, were implemented for the purpose of either toppling the Castro regime or forcing it into more acceptable behavior. The recent sanctions against Iran were imposed for the purpose of freeing American hostages, while the economic measures taken against the Soviet Union have as their stated goal the removal of Soviet troops from Afghanistan. Sanctions also perform a symbolic function.

AD-A092 202/1 PC **A03**/MF **A01**
Army War Coll. Strategic Studies Inst., Carlisle Barracks, PA.
Futures Group Periodic Report-3,
Joseph L. Sites, John F. Scott, and Charles W. Taylor. 1 Nov 80, 28p

During this period the Futures Group continued to evaluate the Third World as a source of conflict and began evaluation of several activities and conditions which could also be sources of conflict. In view of the emphasis on the establishment of the Rapid Development Joint Task Force and the large number of possible conflicts, it seems appropriate to continue with the consideration of the suitability of the use of force in different kinds of conflicts and where suitable the kind of force required. This consideration or study should lead to the production of papers on suitability of use of force and kinds of force required to cope with possible conflicts identified in papers on sources of conflict. A tentative selection of elements of national power has been made. Those presently being considered are: Geography, Industrial Capacity, Population, Character, Morale, Quality of Diplomacy, Quality of Government. Once the basic document is produced there would be an ongoing requirement to update the document and it appears that there would be a requirement to produce analyses of areas within the designated areas. This report contains a summary of reviews of Alvin Toffler's book The Third Wave and provides some implications for the Army. Future directions of research are also noted.

AD-A092 281/5 PC **A12**/MF **A01**
Naval Postgraduate School, Monterey, CA.
The Iranian Revolution and Its Impact on the Future of Soviet-Iranian Relations: An Assessment.
Master's thesis,
Donald George Masch. Jun 80, 266p

Iran has had a long history of relations with Czarist and Soviet Russia, one which has often been characterized by highly opportunistic attempts by Russian leaders to dominate Iran. The development and success of the Islamic Revolt which toppled Mohammed Reza Pahlavi, the Shah of Iran, in 1979 has a profound effect on the Soviet-Iranian relationship. Unsure of the eventual outcome, Moscow's leaders reacted cautiously at the same time opportunistically. The Soviet aim was to avoid committing its support before the revolution's outcome was clear; to protect Soviet interests which could be affected by the instability in Iran; and yet to be in a position to take advantage of whatever situation developed as a result of the conflict. Despite its best efforts, however, the Kremlin has been unable to exploit to any significant degree the advantages thought to be inherent in the overthrow of the Shah and the demise of American influence in Iran, and finds itself instead confronted with a number of issues which hinder its ability to do so. (Author)

AD-A092 283/1 PC **A10**/MF **A01**
Naval Postgraduate School, Monterey, CA.
The Legacy of Ideology in Soviet Foreign Policy Toward the West.
Master's thesis,
Thomas Gene Wyckoff. Jun 80, 209p

This thesis suggests that Marxist-Leninist ideology continues to play a significant role in the conduct of Soviet foreign relations in that it demands continuous, underlying hostility toward the capitalist west. Evidence of the continuing commitment to the ideology by the Soviet leadership is examined in three areas: the efforts of the Communist Part to impart the doctrine to the Soviet people; the bureaucratic stakes associated with the ideology in the Soviet domestic bureaucratic politics process; and evidence that the hostility toward capitalism demanded by the ideology has been present throughout the history of the Soviet Union tempered only by the relative power of the Soviet Union and the capitalist states. (Author)

AD-A092 402/7 PC **A06**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Brotherhood-in-Arms East German Foreign Policy in Africa 'Kalashnikoffs, not Coca Cola Bring Self-Determination to Angola' Volksarme, 1978.
Master's thesis,
Shannon R. Butler. Jun 80, 102p Rept no. NPS56-80-013

During the decade of the 1970's, the German Democratic Republic (GDR) became a major Communist bloc actor on the African continent. While neither as visible nor as numerous as Soviet and Cuban personnel, East German activity in Africa has steadily increased. Yet, Western analysts have been slow to recognize, or acknowledge, the expanding East German presence in Africa. The purpose of this study, which is not meant to be all-inclusive is essentially three-fold: (1) to explore the reasons behind past and present East German involvement in Africa; (2) To examine the types of activities the GDR has been and continues to be engaged in; and (3) To hypothesize about future trends in East German foreign policy in Africa and the Third World. (Author)

AD-B025 005/0 PC **A10**/MF **A01**
Institute for Foreign Policy Analysis Inc Cambridge Ma
U.S. Maritime Interests in the South Atlantic. Appendix I.
Final rept.,
Robert L. Pfaltzgraff, Jr., and Geoffrey Kemp. 1 Oct 77, 222p
Contract N00014-76-C-1160
See also Appendix 2, AD-B025 006L.
Distribution limitation now removed.

See AD-B025 003L for abstract.

AD-B025 006/8 PC **A05**/MF **A01**
Institute for Foreign Policy Analysis Inc Cambridge Ma
U. S. Maritime Interests in the South Atlantic. Appendix II.
Final rept.,
Robert L. Pfaltzgraff, Jr., and Geoffrey Kemp. 1 Oct 77, 94p
Contract N00014-76-C-1160
See also Volume 1, AD-B025 003L.
Distribution limitation now removed.

See AD-B025 003L for abstract.

5E. Human Factors Engineering

AD-A092 009/0 PC **A04**/MF **A01**
Boeing Aerospace Co., Seattle, WA. Engineering Technology Div.
Navy Manager's Guide for the Design Sections of MIL-H-46855.
Final rept. 27 Sep 79-26 Sep 80,
Mildred English. 26 Sep 80, 70p D180-26111-1, NADC-79219-60
Contract N62269-79-R-0740

Explains how to implement the design sections of MIL-H-46855, Human Engineering Requirements for Military Systems, Equipment and Facilities. Written for Navy and contractor Human Factors Engineering (HFE) managers. Cites DoD and Navy requirements for performing HFE design during system acquisition. Describes 8 standard HFE design techniques and 9 design techniques using computers. Explains when and how techniques are used, their products and purpose, and advantages and limitations. (Author)

5F. Humanities

CBPF-A0009/79 PC **A02**/MF **A01**
Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro.
Note on the Differential Thermal Analysis of Amazonian Archeological Pottery.
C. R. Enriquez, M. daC. deM. C. Beltrao, and J. Danon. Feb 79, 5p
U.S. Sales Only.

Sherds of archeological pottery from the mouth of the Amazon river are investigated by D.T.A. These samples have been previously investigated by thermoluminescence (T.L.) and Moessbauer spectroscopy (M.S.). The aim of the study has been to establish possible correlations between the hydration phenomena and the observed charges in the iron oxides of the pottery. (Atomindex citation 11:519115)

5G. Linguistics

AD-A092 500/8 PC **A02**/MF **A01**
Dartmouth Coll., Hanover, NH. Dept. of Mathematics.
Natural Language Data Base Query.
Final rept.,
Larry R. Harris. 1 Oct 80, 24p
Contract N00014-75-C-0514

This final report is intended to be a summary of the research on Natural Language Data Base Query. It has been the goal of this research to determine a minimal set of techniques sufficient to provide a practical natural language capability for data base query. This report summarizes the basic requirements for such a capability and suggests techniques for meeting these requirements. As such, this report is in effect, a specification of the minimal functionality for a practical natural language data base query capability.

AD-860 348/2 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, USASTRATCOM Facility Nha Trang.
Operational rept. for quarterly period ending 30 Apr 69.
10 May 69, 12p OACSFOR-OT-UT-692230
Distribution limitation now removed.

No abstract available.

PB81-125619 PC **A06**/MF **A01**
Urban and Rural Systems Associates, San Francisco, CA.
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
Rept. for Apr 79-Jul 80,
Ernest J. Fazio, Jr., and Sally Jo Jones. May 80, 125p DLMA-20-06-78-07
Contract DL-20-06-78-07
Portions of this document are not fully legible.

The study examined the relationship between CETA Title III Indian programs and Indian reservation economic development on twenty-five Indian reservations and Native Alaskan communities nationwide. During the study a wide range of materials were collected, and interviews were conducted with over 400 persons. The study analyzed the relationships between the CETA programs and the EDA, HUD, BIA, IHS, USDA, etc. funded economic development activities, and provided a perspective on the state of reservation economic development. The manual highlights a number of exemplary community-based data collection efforts undertaken by Native American CETA grantees to improve their planning and program development activities.

5I. Personnel Selection, Training, and Evaluation

AD-A091 912/6 PC **A07**/MF **A01**
Canyon Research Group, Inc., Westlake Village, CA.
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
Final rept. 23 Aug 79-23 Aug 80,
Michael E. McCauley, and Clarence A. Semple. Aug 80, 128p 30-3067, NAVTRAEQUIPC-79-C-0042-1
Contract N61339-79-C-0042
See also NAVTRAEQUIPC-77-C-0162.

The use of automated speech technology (AST) in training systems was addressed through the evaluation of the experimental prototype Precision Approach Radar Training System (PARTS). The use of computer speech recognition for simulating the approach control task and for providing input to the automated performance measurement subsystem demonstrated the potential for enhancing automated training. Computer speech synthesis provided the capability to simulate verbal communications from pilots and other controllers, and to demonstrate proper precision approach radar (PAR) procedures by a simulated model controller. The PARTS was evaluated during an eight-month period while being used by students at the Naval Air Traffic Control Schools. Students trained on PARTS were compared with students from the normal PAR training course in a pseudo transfer of training study. No significant differences in PAR performance were found, but the entire range of skills taught by PARTS was not able to be included in the criterion test. Observation, interview, and a performance measurement validation study revealed a number of problems associated with the courseware in PARTS. These problems led to limited acceptance by instructors, but student acceptance was high. A cost-effectiveness analysis generated estimates of potential savings in personnel utilization through the use of AST training systems. Suggestions were made for PARTS design modifications and for future applications of AST training systems, particularly in air traffic control. (Author)

AD-A091 926/6 PC **A04**/MF **A01**
National Maritime Research Center-Kings Point, NY. Computer Aided Operations Research Facility.
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
Technical rept.,
T. J. Hammell, K. E. Williams, J. A. Grasso, and W. Evans. Jul 80, 67p CAORF-50-7810-01-VOL-1, MA-RD-930-80033-VOL-1, USCG-D-12-80-VOL-1
See also Volume 2, AD-A092 177.

Simulation technology has progressed to the point that it may present a cost effective means for enhancement of the mariner training and licensing process. The use of simulation in the deck officer training and licensing process is under investigation. This first phase had developed a large information base pertaining to deck officer behavior and training technology; has developed a methodology to evaluate alternative training system characteristics; and has identified a broad set of relevant issues that require further empirical research. Later phases are planned to investigate these issues. (Author)

AD-A091 930/8 PC **A09**/MF **A01**
Logicon, Inc., San Diego, CA. Tactical and Training Systems Div.
Ground Controlled Approach Controller Training System (GCA-CTS) Student Guide.
Final rept. 23 Sep 77-23 Feb 80,
Mary Hicklin. Jun 80, 195p NAVTRAEQUIPC-77-C-0162-4
Contract N61339-77-C-0162

This training manual covers the basic concepts involved in Ground Controlled Approach (GCA) air traffic control procedures. It is intended for use in conjunction with the computer managed instruction provided by the Ground Controlled Approach Controller Training System (GCA-CTS). (Author)

AD-A091 950/6 PC **A03**/MF **A01**
Army Civil Affairs School, Fort Gordon, GA.
Civil Affairs Developments.
Apr 71, 31p

A great many interesting developments in the field of Civil Affairs have occurred since my predecessor, Colonel David L. Davis, last wrote you on this subject, on 17 August 1970; so it is my pleasure and privilege to transmit to you at this time a collection of speeches and other items about which you will want to be informed. Since most of you are commissioned in the United States Army Reserve, it is fitting that this letter be published on the 63d anniversary of the Army Reserve. Many changes have occurred at the School and in the entire CA Community over the past several months, and many more changes are in the process. However, it is only to the extent to which all of us become concerned with making contributions to change and improvement that the telling criterion of the effectiveness of the processes of CA may be realistically evaluated.

AD-A091 979/5 PC **A04**/MF **A01**
Army Training and Doctrine Command, Fort Monroe, VA.
Job Performance Aid: Job and Task Analysis.
Final rept.
10 Oct 80, 54p Rept no. TRADOC-PAM-351-6
See also Rept. no. TRADOC-PAM-351-4.

This document is a job performance aid for conducting job and task analysis. The bulk of the information in the aid is condensed or summarized from the Job and Task Analysis Handbook (TRADOC Pam 351-4), the Job and Task Analysis course, and TRADOC Regulation No. 351-4. (Author)

AD-A091 990/2 PC **A99**/MF **A01**
Air Force Flight Test Center, Edwards AFB, CA.
USAF Test Pilot School. Flight Test Handbook. Performance. Theory and Flight Techniques. Chapters 1 through 9.
Final rept.
1 Aug 79, 1052p Rept no. AFFTC-TIH-79-1
Supersedes Rept. no. AFFTC-TIH-70-1001-VOL-1-REV, AD-A011 992. VOL-2-REV, AD-A011 993, VOL-3-REV, AD-A011 994.

This handbook has been compiled by the instructors of the USAF Test Pilot School for use in the performance portion of the School's course. This handbook outlines aerodynamic theory applicable to flight test procedures; deal specifically with the theoretical basis for performance testing, and describes performance flight test techniques developed at the Air Force Flight Test Center, Edwards Air Force Base, California. While this handbook is primarily intended to be an academic text in the USAF Test Pilot School, previous editions have been used by virtually all segments of the flight test community. It is our sincere desire that this revision will be helpful to anyone engaged in performance flight testing. (Author)

AD-A092 019/9 PC **A02**/MF **A01**
Army Science Board, Washington, DC.
Ad Hoc Sub-Group Interim Report on National Training Center,
Russell D. O'Neal, Jerome Freedman, Richard M. Langendorf, James G. Miller, and Irene C. Peden. Sep 80, 25p

This document examines and reports on Army plans to use modern instrumentation technology to evaluate unit exercises at the Army National Training Center. The study intent was to focus on the second generation instrumentation support system, addressing technical feasibility and engineering realizability of meeting the schedule of implementation. Since a contract decision for Phase I has not yet been announced, it was infeasible to fully address the study terms. The study group will reconvene in November 1980 to assess potential impacts on Phase II and develop a final report. (Author)

AD-A092 020/7 PC **A02**/MF **A01**
Seville Research Corp., Pensacola, FL.
Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume I. Executive Summary.
Final rept. 19 May 78-19 May 79.
May 79, 23p Rept no. SEVILLE-TR-79-02-VOL-1
Contract MDA903-78-C-2008
See also Volume 2, AD-A092 021.

This report presents results of an evaluation of the Army's 175/40 Initial Entry Rotary Wing (IERW) training program. The program consists of 175 flight and 40 simulator hours. In the last training phase of the program, students are divided into two training tracks, i.e., Utility Helicopter and Aeroscout. Data were gathered from IERW training files and through questionnaires administered to instructors at the Army Aviation Center and to unit instructors, supervisors, and program graduates at aviation field units world-wide. Data were gathered on graduates of both the 175/40 program and the 180/20 program that preceded it, and comparisons between the two programs are made. Results and conclusions are presented with reference to nine specific evaluation objectives. Major conclusions are: (1) the 175/40 IERW course is accomplishing its objectives; (2) the 175/40 course is an improvement over the 180/20 course; and (3) proficiency progression and individualized training can play an effective role in IERW training. (Author)

AD-A092 021/5 PC **A11**/MF **A01**
Seville Research Corp., Pensacola, FL.
Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume II. Evaluation Report.
Final rept. 19 May 78-19 May 79.
May 79, 240p Rept no. SEVILLE-TR-79-02-VOL-2
Contract MDA903-78-C-2008
See also Volume 1, AD-A092 020.

This report presents results of an evaluation of the Army's 175/40 Initial Entry Rotary Wing (IERW) training program. The program consists of 175 flight and 40 simulator hours. In the last training phase of the program, students are divided into

two training tracks, i.e., Utility Helicopter and Aeroscout. Data were gathered from IERW training files and through questionnaires administered to instructors at the Army Aviation Center and to unit instructors, supervisors, and program graduates at aviation field units world-wide. Data were gathered on graduates of both the 175/40 program and the 180/20 program that preceded it, and comparisons between the two programs are made. Results and conclusions are presented with reference to nine specific evaluation objectives. Major conclusions are: (1) the 175/40 IERW course is accomplishing its objectives; (2) the 175/40 course is an improvement over the 180/20 course; and (3) proficiency progression and individualized training can play an effective role in IERW training. (Author)

AD-A092 026/4 PC **A13**/MF **A01**
Office of the Oceanographer of the Navy, Alexandria, VA.
University Curricula in the Marine Sciences and Related Fields. Academic Years 1969-70 and 1970-71.
1971, 284p

This compilation of marine sciences institutions, academic degrees, curricula, teaching and research facilities and teaching faculties is based on information supplied by the institutions in response to questionnaires sent by the Committee on Marine Research, Education and Facilities. Only those institutions which responded to the questionnaire are included. In the title of this document the term 'marine sciences' refers to academic programs in oceanography, marine science and ocean engineering; these program areas place significant emphasis on the oceans. The distinction between 'oceanography' and 'marine science' reflects terms used by the institutions themselves. Generally, 'oceanography' is considered a multidisciplinary science whereas 'marine science' refers to the marine branch of a particular scientific discipline-i.e., geology, chemistry, biology, etc. The titular term 'related fields' refers to academic programs for training ships' officers and maritime engineers, naval architects, marine (science and engineering) technicians, and applied fisheries scientists and technicians. The omission in this report of degrees in fields other than marine sciences does not in any way imply that a system of training which culminates in a marine sciences degree is superior to that which channels training through the more traditional scientific or engineering disciplines. Students with a primary interest in a classical discipline may wish to investigate its possibilities in relation to ocean-oriented work.

AD-A092 035/5 MF **A01**
Army Training Developments Inst., Fort Monroe, VA.
Proceedings of the TRADOC/Training Developments Institute Chiefs of Anlaysis Seminar (4th) Held in Hampton, Virginia, 16-18 July 1980.
30 Sep 80, 201p
Availability: Microfiche copies only.

TThe proceedings represent the presentations made at the Fourth TRADOC Chiefs of Analysis Seminar held at the Hampton Holiday Inn, VA; 16-18 July 1980. The major themes of this seminar were the TRADOC Basic Skills Education Program Curriculum Development Project, 'Soft Skills or Extended Analysis, other Front End Analysis Alternatives', and related topics. The intent of these seminars is to permit the service schools and invited speakers to present their opinions on varied subjects in order to enhance the Army's job/task analysis efforts. (Author)

AD-A092 063/7 PC **A20**/MF **A01**
Deputy Chief of Staff for Logistics (Army), Washington, DC.
Army Aviation Maintenance Career Management Field 67 Study.
Final rept.,
Ronald C. Vines, Jamie N. Johnston, Jr., John H. Pratt, and Kenneth E. Fee. Oct 80, 460p

The Army Aviation Maintenance Career Management Field 67 Study was directed by Department of the Army and was conducted under the sponsorship of the Deputy Chief of Staff for Logistics. The Study was charged with conducting an in-depth evaluation of the 17 aircraft repair and aircraft component repair MOS (Military Occupational Specialties) which constitute the enlisted aviation maintenance career management field (CMF 67) and with providing appropriate recommendations regarding problem resolution. Chapter areas of interest include: Aviation Force Structure, Personnel Management, Enlisted Aviation Maintenance Training, Army Aviation Maintenance, Nonaviator Flying Status for Enlisted Personnel, and Reserve Component Implications. The Study concludes that there has been a decline in Army aviation maintenance effectiveness. The reasons for this decline include: an inadequate organizational structure, an ineffective MOS structure, inappropriate grade authorizations, an unsatisfactory first term reenlistment rate for aviation maintenance personnel, a less than effective aviation maintenance training program, and increased equipment complexity. (Author)

AD-A092 108/0 PC **A03**/MF **A01**
Center for Naval Analyses, Alexandria, VA. Inst. of Naval Studies.
Personnel Management in the All-Volunteer Force Study.
Final rept.,
Robert F. Lockman. Apr 80, 26p Rept no. CNSR-8
Contract N00014-76-C-0001

The Personnel Management in the All-Volunteer Force Study assesses the use of applicant screening, recruit assignment, and reenlistment bonuses to improve the retention of enlisted personnel. (Author)

AD-A092 126/2 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Evaluation of the Application of ISD to P-3 Pilot Training.
Master's thesis,
William Allen Snider. Jun 80, 60p

To evaluate the Navy's training under instructional systems development (ISD) procedures the annual, force-level, NATOPS examination scores of pilots in operational squadrons who had been trained under the recently installed ISD program at VP-31 were compared with those who had not been trained under ISD. Scores from only the open- and closed-book written examinations, which pertain to normal and emergency procedures and aircraft systems knowledge, were used since their content reflected most closely the course objectives of the nontactical pilot training provided by VP-31. Pilot rank, designation, time-in-squadron, and squadron location were used as controls. The type of training made no difference in open-book scores. For closed-book scores, ISD training resulted in a marginal but consistently negative difference when interactive with squadron location. At one location ISD-trained pilots scored significantly lower while there was no difference among pilots at another location. The findings are discussed within the context of the study and with respect to training and ISD in general. (Author)

AD-A092 177/5 PC **A99**/MF **A01**
National Maritime Research Center-Kings Point, NY. Computer Aided Operations Research Facility.
Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
Technical rept.,
T. J. Hammell, K. E. Williams, J. A. Grasso, and W. Evans. Jul 80, 671p CAORF-50-7810-01-VOL-2, MA-RD-930-80033-VOL-2, USCG-D-12-80-VOL-2
See also Volume 1, AD-A091 926.

For complete abstract, see AD-A091 926.

AD-A092 266/6 PC **A03**/MF **A01**
International Laser Systems, Inc., Orlando, FL.
MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.
22 Nov 76, 31p
Contract N61339-76-C-0116
See also AD-A092 477.

The purpose of the demonstration is to demonstrate: the system's level of discrimination between hit and miss achieved with the MAGLAD system as compared to the actual E- and F-type stationary target profiles; the effectiveness and accuracy of the Rifle Sight/Laser Alignment Kit; system invulnerability to false alarms in highest ambient light conditions; the full-scale system's simulation effectiveness with simulated reduced visibility via beam-power attenuation; the moving-targets' lead angle simulation effectiveness; and the 1/12 scale target's simulation effectiveness.

AD-A092 267/4 PC **A04**/MF **A01**
International Laser Systems, Inc., Orlando, FL.
MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan,
Final rept.,
D. R. Woods. 9 Feb 77, 54p NAVTRAEQUIPC-76-C-0116-2
Contract N61339-76-C-0116
See also AD-A092 477.

For abstract see AD-A092 266.

AD-A092 275/7 PC **A04**/MF **A01**
Gibboney (Richard A.) Associates, Inc., Silver Spring, MD.
Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
Final rept.,
Johnnie Daniel. Nov 80, 60p Rept no. RAG-52
Contract N00014-78-C-0658

The Life Path Questionnaire (LPQ) was developed and refined as a non-traditional predictor of success and retention in the Navy. It is predicted on the assumption that premilitary experiences are related to attrition and military performance. This assumption has been demonstrated by previous researchers and the current author in previous research. The LPQ yields scores for six major scales: Adaptability, Relationship with Authority Figures, Early Maturity, Family Relationships, Personal Competence, and Vocational Maturity. In the previous research a significant relationship was found between the LPQ scales and measures of both success and retention in the Navy. This previous research, however, suggested that there might be differences. The current research was directed at determining if blacks and whites differ significantly in their responses on the LPQ. If differences do occur, are these differences in premilitary experience significant factors in predicting success and retention in the Navy.

AD-A092 279/9 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Human Resource Management in the Navy: The Specialists' Viewpoint.
Master's thesis,
Martin Gus Lorberg, III. Jun 80, 52p

This study focussed on the perceptions of the Navy's Human Resource Management Specialists (HRMSs) toward their coworkers and the Human Resources Management (HRM) program. Thirty HRMSs from all the HRM centers and detachments were interviewed using an open ended interview guide. The data were analyzed by using the methodologies of Dunham & Smith, McCall & Simmons, Schatzman & Strauss, and Webb's 'Triangulation' technique. The data indicated perceptions of an improved image in the fleet. Concern was varied about top level support, marketing for the HRM program, the possibility of a future voluntary HRM cycle, and the emphasis currently being placed on certain HRM programs. The HRMs was preceived as improving in quality, yet some thought more stringent entry criteria were needed. The need for warfare specialists and HRMSs with previous experience was also expressed. Recommendations are offered for improving the image of the Navy's HRM program based on the data. (Author)

AD-A092 280/7 PC **A06**/MF **A01**
Naval Postgraduate School, Monterey, CA.
RTC CREDO: Initial Assessment.
Master's thesis,
Stephen G. Hawkins. Jun 80, 110p

A statistical analysis was conducted to initially assess the effectiveness of the experimental program, RTC CREDO, to counter first-term enlisted attrition in the Navy. Cross-tabulation, discriminant, and multiple regression analyses were performed

to examine various experimental and control groupings and their observed attrition. The results of this study were tentative and inconclusive because of the recency of the experiment. Indications for future research were made, which, with the passage of time and accumulation of more data, will enable fuller and more comprehensive studies of the effectiveness of RTC CREDO to be made. (Author)

AD-A092 295/5 PC **A06**/MF **A01**
Human Resources Research Organization, Alexandria, VA.
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
Final rept.,
Paul W. Caro, Edward J. Miller, Melvin D. Montemerlo, and Wallace W. Prophet. 28 Jun 74, 119p Rept no. HUMRRO-FR-D6-74-1
Contract N61339-74-C-0133

The general goal of Army aviation with reference to simulation is to maximize the cost-effective use of simulators in accomplishing training and operational objectives. This report documents results of a study in which HumRRO (1) identified current and required simulation projects related to that goal; and (2) developed estimates of funding required to support those projects from FY76 through FY80. (Author)

AD-A092 308/6 PC **A03**/MF **A01**
N.. .:' Postgraduate School, Monterey, CA.
A General Retention Model Applied to the Naval Aviator.
Master's thesis,
James Robert O'Donnell. Jun 80, 42p

This Thesis was directed toward the development of a descriptive, causal model of Naval Aviator retention. Studies on retention and turnover indicate that a multiplicity of organizational, work, and personal factors can be associated with the decision to withdraw from the Navy. A general model of retention, following a review of the literature, led to a specific model of Naval Aviator retention, based on a synthesis of the literature and the author's experience as a Naval Aviator. The findings that parity in pecuniary and nonpecuniary compensation between Navy and alternative employment opportunities must be addressed before Naval Aviator retention Problems can be resolved. (Author)

AD-A092 370/6 PC **A05**/MF **A01**
Georgia Univ., Athens. Dept. of Management.
Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
Final rept. 1 Jun 79-31 May 80,
Richard Huseman, William Boulton, Robert Gatewood, and John Hatfield. Sep 80, 95p
AFOSR-TR-80-1176
Contract F49620-79-C-0081

The project was a preliminary testing of a model that specified the relationship between the content of communication and individual work performance of Air Force maintenance specialists. The model states that content of communication is in general positively related to individual work performance; however the specific content of communication is modified by characteristics of the work being performed. That is performance on jobs with differing characteristics should be related to different combinations of communication content rather than one set of communication content dimensions being equally applicable to all work activities. The project developed measures of individual work performance, seven factors of communication content, and seven measures of work characteristics. These were evaluated according to response patterns, factor structure, and/or reliability indicants.

AD-A092 403/5 MF **A01**
Naval Postgraduate School, Monterey, CA.
An Attempt to Model the USN Unrestricted Line Officer Promotion Process Using an Adapted Length of Service Markov Model.
Master's thesis,
Richard Winsloe Weber. Jun 80, 70p
Availability: Microfiche copies only.

A Markov Model is developed for the U.S. Navy Unrestricted Line Officer promotion process. The Transition Matrix is derived from historical promotion and attrition data. The model is based on seniority, this being the fundamental measurable qualification for promotion. The model is tested using data on Lieutenant Commander movement in the period 1973-79. Stocks predicted in the test are compared with actual known stocks. The comparison shows the model to be a poor predictor of future stocks because of instability in the promotion process during the period in which data was collected. Large variations in cohort sizes have induced nonstationary promotion rates in the process. The Markov model based on seniority is impractical. Any alternative approach needs to account for, or be independent of, irregularities in cohort size. (Author)

AD-A092 406/8 PC **A06**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Navy Civilian Careers: A Formulation Problem.
Master's thesis,
Robert Rawlings Jackson, Jr. Jun 80, 111p

Career planning for civilian personnel in the Department of the Navy emphasizes efforts in various intern programs for journeyman level employees. Career planning above those levels is inadequate. Many of the problems that plague the military career system directly affect civilian careers. The Navy's logistics system encompasses a broader range of civilian occupational classifications than do other civilian career programs. The Navy's logistics system is affected by budgetary considerations and decentralized management which adds complexity to the civilian logistics career program. It is concluded after comparing current theory and industrial practices to the Navy's civilian career programs that the Navy's program is encumbered by the organizational structure and technologies used, and that there is a lack of an organizational development and analytical capability to effect needed change. Specific recommendations are made to develop the requisite capabilities.

AD-A092 412/6 PC **A08**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Personal, Situational, and Organizational Determinants of Navy Enlisted Attrition.
Master's thesis,
John V. Smith, Jr., and Walter Anthony Kendall. Jun 80, 165p

This thesis was conducted to identify predictors of first-term Navy enlisted personnel attrition and to determine the relative influence of various individual and organizational factors on attrition. A cohort of non-prior service recruits was tracked over a 34-month period, and the attrition rates of general detail and Navy A school personnel holding a voluntary release option were compared to those of a control group not holding such an option. Whereas the traditional demographic predictors, in isolation, explained only a small percent of the variance in the dependent variable (attrition), a marked improvement in accuracy of attrition prediction was observed following the inclusion of various organizational and situational factors, such as Navy school attended, entering rate, and initial fleet assignment. These variables added significantly to the accuracy of attrition predictions and should aid Navy managers in developing initiatives for countering attrition. (Author)

AD-A092 418/3 PC **A03**/MF **A01**
Advanced Research Resources Organization, Washington, DC.
Comparison of Male and Female Performance Evaluation Narratives.
Final rept. 30 Oct 78-30 Sep 79,
Veronica F. Nieva, Ellen J. Eisner, and Sharyn M. Mallamad. Sep 79, 41p Rept nos. ARRO-3038-FR, ARRO-R79-8
Contract N00123-78-C-0287

Performance evaluation narratives of enlisted personnel eligible for promotion from petty officer first-class to chief petty officer were content analyzed to determine: (1) what attributes or themes were being used in the evaluations; (2) whether the attributes differed for men and women; and (3) how the attributes were related to selection and non-selection. Content coding categories were developed from an examination of the previous year's narratives. A sample of 104 men and women, matched by rating (job position) and select status, were used for the content analysis. The categorization scheme discriminated selected personnel from non-selected personnel. Two patterns of bias were uncovered. The first pattern (Type I) identified variables which differentiated the select status of one sex while failing to discriminate the status of the other. The second type of bias (Type II) isolated characteristics which were related to selection for one sex but non-selection for the other. Examples of categories showing Type I Bias were intelligence, technical proficiency, and leadership; examples of Type II Bias were global motivation and positive attitude. (Author)

AD-A092 477/9 PC **A06**/MF **A01**
International Laser Systems, Inc., Orlando, FL.
MAGLAD. Trainer Engineering Report Demonstration Results.
Final rept. 14 Feb-15 Mar 77,
D. R. Woods. 29 Mar 77, 109p NAVTRAEQUIPC-76-C-0116-3
Contract N61339-76-C-0116
See also AD-A092 267.

The purpose of this test report is to document results of the Effective Simulation, Range and Alignment Tolerance Demonstration. This report of test results is based on the MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.

AD-A092 481/1 PC **A02**/MF **A01**
Navy Personnel Research and Development Center, San Diego, CA.
Computer-Managed Instruction in the Navy. I. Research Background and Status.
Special rept.,
Nick Van Matre. Sep 80, 23p Rept no. NPRDC-SR-80-33

This report, the first of a series on Navy CMI, describes the problem areas that limit the effectiveness of the CMI system and the R and D proposals that have been developed to address these problems. Future reports will describe work being done under these proposals. Results will be used by the Chief of Naval Education and Training (CNET), Chief of Naval Technical Training (CNTT), commanding officers of all the Navy CMI schools, and other concerned with computer-based instruction.

ED-183 184 Not available NTIS
Illinois Univ. at Urbana-Champaign. Dept. of Secondary Education.
The Question Episode--Building Block of Teaching with a Computer. The Illinois Series on Educational Application of Computers, No. 4e,
J. Richard Dennis. 1979, 16p
For related documents, see IR 008 123-139. Sponsored in part by EXXON Education Foundation, New York.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This paper presents the notion of a 'question episode,' the smallest complete unit of computer-student interaction in computer assisted instruction, and describes such important elements as question types, student input, interpretation of student inputs, computer replies, and duration limits. Included are some guidelines to help determine the quality of question episodes found in computerized lessons. This resource for preservice and inservice teacher training suggests two study activities and lists one reference.

ED-183 186 Not available NTIS
Illinois Univ. at Urbana-Champaign. Dept. of Secondary Education.
Tutorial Instruction on a Computer. The Illinois Series on Educational Application of Computers, No. 6e,
J. Richard Dennis. 1979, 11p
For related documents, see IR 008 123-139. Sponsored in part by EXXON Education Foundation, New York.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This paper describes a tutorial lesson to give teachers a model against which to compare ad

contrast a variety of instances of such lessons, and to help them to eventually come to a personal position on what constitutes a tutorial computer lesson. Three flow charts are provided as examples of tutorial style episodes. This resource for preservice and inservice teacher training includes a suggested study activity.

ED-183 189 Not available NTIS
Illinois Univ. at Urbana-Champaign. Dept. of Secondary Education.
Instructional Games and the Computer-Using Teacher. The Illinois Series on Educational Application of Computers, No. 9e,
J. Richard Dennis. 1979, 22p
For related documents, see IR 008 123-139. Sponsored in part by EXXON Education Foundation, New York.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This discussion of games--particularly computerized games--and their potential in schools addresses several topics: what games are, types of games (free-form, rigid-form, or open-form) and their educational applications, the role of games in learning, student participation in adapting existing games for computer presentation, and special classroom management problems the teacher must plan for. This is one of a series of documents prepared as resources for the preservice and inservice training of teachers, and a 24-item bibliography is included.

ED-183 192 Not available NTIS
Illinois Univ. at Urbana-Champaign. Dept. of Secondary Education.
Getting Started in School Computing: Preparing to Purchase. The Illinois Series on Educational Application of Computers, No. 14e,
J. Richard Dennis, and Viktors Muiznieks. 1979, 31p
For related documents, see IR 008 123-139. Sponsored in part by EXXON Education Foundation, New York.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This paper identifies concerns and provides guidelines for the administrator or teacher who is involved in making decisions about acquiring, maintaining, or expanding computer resources. Several questions are raised and topics discussed which focus attention upon various specific elements in a system which are pertinent to procurement. Major questions are raised concerning meeting user needs, resource appropriateness, efficiency, equipment acquisition, and software procurement. A 28-item bibliography is included.

ED-183 200 Not available NTIS
Illinois Univ. at Urbana-Champaign. Dept. of Secondary Education.
Documentation--A Computerized Instructional Resource Management System. The Illinois Series on Educational Application of Computers. No. 26e,
Henry Lockard, and John Cox. 1979, 90p
For related documents, see IR 008 123-140, and IR 008 142. Sponsored in part by EXXON Education Foundation, New York.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This paper, which describes a computerized appointment scheduling system for individualized instruction from the point of view of the teachers and students who will use it, also includes more technical data for those readers who are familiar with the BASIC language. A guide to the logic, possible modifications, and a program listing are included, as well as a discussion of some of the less common BASIC statements used in the system to assist in various commands. The opening user's guide is intended to help those not necessarily familiar with BASIC to learn how to use the system, while the more technical programmer's guide which follows includes file structure, new semester/new teacher user program changes, other modifications and conversion (transportability) guidelines, code description, variables used, and program listing.

ED-183 201 Not available NTIS
Illinois Univ. at Urbana-Champaign. Dept. of Secondary Education.
MC Painting Manual A: User's Guide. The Illinois Series on Educational Applications of Computers, No. 33. Revised Edition,
Bruce Hicks, and Melanie Zibit. Jul 79, 16p
For related documents, see ED-160 068, ED-172 772, and ED-172 779.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This manual provides detailed instructions for using the different tools and procedures of the microcomputer painting medium developed at the university of Illinois, which enables the user to make pictures on a color TV screen. The user is in immediate and direct control of the picture-making at all times, through his use of two 'paddles,' buttons on the 'paddles,' and the keyboard of the microcomputer. Typical equipment needed includes an APPLE II microcomputer, a small color TV set, a modulator between the computer and the TV, two 'paddles,' and a disk drive or a cassette tape recorder. The MC painting medium is implemented on the computer through a program, HZ1 (mod SBN), written in BASIC language, which is loaded from diskette or cassette tape. An MC painting can also be saved on a diskette or a cassette tape and later loaded for viewing or editing.

HRP-0902582/6 PC **A04**/MF **A01**
Association of Schools of Public Health, Arlington, VA.
Schools of Public Health Trends in Graduate Education,
Thomas L. Hall, Rudolph S. Jackson, and William B. Parsons. Feb 80, 64p DHHS/PUB/HRA-80-45
Contract PHS-HRA-231-77-0007

The report presents a summary of major findings and trends relevant to school of public health applicants, students, and graduates during the five year period, 1974-1979. These findings are placed within the context of a longer period which extends back to the early 1960s (in the case of graduates, to 1930) and forward to the year 2000. The report concludes with a section which examines the limitations of the present data base for the purposes of planning and makes suggestions regarding future data requirements.

PB81-123424 PC **A15**/MF **A01**
Young (Arthur) and Co., Washington, DC.
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume I.
Aug 76, 343p
Prepared in cooperation with CSF Ltd., Rockville, MD. Sponsored in part by National Research Council, Washington, DC. See also Volume 2, PB81-123432.Portions of this document are not fully legible.

This study is the first volume of a two volume set within a group of five volumes submitted to the National Academy of Sciences by CSF Ltd. and Arthur Young and Co. Volume I deals with staffing methodologies, and presents the Manpower Resource Management System (MRMS) which was developed for the VA health system as a means of providing information to management for the control and allocation of human resources. Fact Finders, which determine major functions performed, equipment used in the service, organization layouts, policies and procedures, hours of operation, historical workload volume and mix, and other service-specific data are included for each service. Implementation guides, data collection check lists, data collection forms, standard development worksheets and target setting instructions accompany the fact finders for each respective service. This two volume set should be used as a whole.

PB81-123432 PC **A16**/MF **A01**
Young (Arthur) and Co., Washington, DC.
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume II.
Aug 76, 365p
Prepared in cooperation with CSF Ltd., Rockville, MD. Sponsored in part by National Research Council, Washington, DC. See also Volume 1, PB81-123424.Portions of this document are not fully legible.

Volume II deals with staffing methodologies, and presents the Manpower Resource Management System (MRMS) which was developed for the VA health system as a means of providing information to management for the control and allocation of human resources. Fact Finders, which determine major functions performed, equipment used in the service, organization layouts, policies, and procedures, hours of operation, historical workload volume and mix, and other service-specific data are included for each service. Implementation guides, data collection check lists, data collection forms, standard development worksheets and target setting instructions accompany the fact finders for each respective service. This two volume set should be used as a whole.

PB81-123440 PC **A19**/MF **A01**
Young (Arthur) and Co., Washington, DC.
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System.
Final rept.
Aug 76, 430p
Prepared in cooperation with CSF Ltd., Rockville, MD. Sponsored in part by National Research Council, Washington, DC.Portions of this document are not fully legible.

The report is the first volume of five dedicated to the study of human resources in the VA health system. This project focused on the development and testing of methodologies to determine and analyze staffing requirements for various services in VA hospitals. In addition, a manpower resource management system which measured manpower staffing productivity was designed and tested. The present report is divided into nine sections: (1) overview of the project; (2) VA work measurement and management information; (3) manpower resource management system; (4) system-wide staffing projections; (5) comparison of VA and non-VA hospitals; (6) turn-around time analysis; (7) nursing service: inpatient activity analysis; (8) data collection support; and (9) staffing methodologies.

PB81-123457 PC **A04**/MF **A01**
Young (Arthur) and Co., Washington, DC.
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Systems Users Manual.
Aug 76, 59p
Prepared in cooperation with CSF Ltd., Rockville, MD. Sponsored in part by National Research Council, Washington, DC.Portions of this document are not fully legible.

Designed to be utilized by Service Chiefs, Hospital Directors, Medical District Directors and Chief Medical Directors, this Systems Users Manual is one volume in a set of five submitted to the National Academy of Sciences by CSF Ltd. and Arthur Young and Co. Its purpose is to familiarize each level of the VA health system with the operation and uses of the Manpower Resource Management System (MRMS). Operation procedures are not included in this volume since they are provided in the System Operations Manual. Rather, it is oriented toward uses of MRMS outputs and their impact on the manager and his/her decisions. The major focus of this manual is on MRMS output reports. Secondary emphasis is placed on the system's implementation and data input considerations.

PB81-123465 PC **A08**/MF **A01**
Young (Arthur) and Co., Washington, DC.
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. System Operations Manual.
Aug 76, 166p
Prepared in cooperation with CSF Ltd., Rockville, MD. Sponsored in part by National Research Council, Washington, DC.Portions of this document are not fully legible.

Designed to be utilized by a centralized group of staffing specialists and the hospital-based MRMS coordinators, this Systems Operation Manual is one volume in a set of five submitted to the Nation-

al Academy of Sciences by CSF Ltd. and Arthur Young and Co. The Systems Operation Manual is to be used in conjunction with the two volume set of Staffing Methodologies, and its purpose is to provide the materials and detailed instructions for the application of the Manpower Resource Management System (MRMS) throughout the hospital system. Technically oriented, the major focus is on the tools and methodologies required to implement, maintain and update the MRMS standards and reports. Each section of the manual provides the procedures, tasks and forms for each of the following phases: (1) implementation; (2) maintenance and updating; and (3) on-going reporting. Since this manual is oriented toward the operational aspects of the system, a detailed discussion of managerial usage is not provided.

PB81-123713 PC **A04**/MF **A01**
Minimum Wage Study Commission, Washington, DC.
A Demographic Profile of Minimum Wage Workers, Working Paper Number 4,
Curtis Gilroy. Sep 80, 68p

This descriptive profile of minimum wage workers uses primarily data from the Current Population Survey (CPS). Supplementary data from the Wage Distribution Survey and National Longitudinal Surveys support the analysis and are consistent with the findings of the CPS. Time-series and longitudinal patterns, in addition to cross section observations, are presented.

PB81-126732 PC **A07**/MF **A01**
Pennsylvania Univ., Philadelphia.
The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
Final rept.,
Jere R. Behrman, Paul Taubman, and Robin Sickles. 20 Nov 80, 140p
Contract DL-J-9-M-9-0199

Since the passage of the FLSA in 1938, there has been considerable controversy about the impact of minimum wage laws on the distribution of earnings and its components. Advocates claim that a minimum wage aids in the attainment of equalitarian social distribution goals by assuring a fair wage to those workers at the low end of the distribution and thus increasing their earnings. Critics claim that the effects are quite to the contrary: there is increased unemployment among low skilled workers and there are no benefits for disabled and other nonlabor market participants. These debates concentrate on earnings and do not place a value on leisure time. This paper discusses income distribution and minimum wages.

PB81-127441 PC **A04**/MF **A01**
Minimum Wage Study Commission, Washington, DC.
Exemptions to the Fair Labor Standards Act - Transportation Sector.
Working paper no. 10,
Conrad F. Fritsch. Nov 80, 75p

Discussion of nine exemptions affecting the transportation sector identifies, when available, the number of employers and employees affected, the status of employee representation by labor organizations, employee earnings and direct wage increases resulting from removal of the exemption. A summary of the alternative rationale for retaining or eliminating each exemption is provided. Legislative history and unique structural or institutional aspects of each exempt sector are described to provide a further basis for evaluating the merits of each exemption.

PB81-128472 PC **A03**/MF **A01**
Statens Vaeg- och Trafikinstitut, Linkoeping (Sweden).
Yrkesfoerarutbildningen Infoer 1980-Talet. Resultat fran Gruppdiskussioner med Laerare Inom Yrkesfoerarutbildningen Inom Gymnasieskola och Arbetsmarknadsutbildning (Professional Driver Training for the 1980's. Opinions and Experiences of Professional Driver Teachers),
Krister Spolander. 1980, 32p VTI/MEDDELANDE-196
Text in Swedish. Abstract in Swedish and English. Also pub. as ISSN-0347-6049.

Some current issues in the field of professional driver training were discussed by 214 teachers in 28 groups. Each group worked in two sessions on two conference days. Referring to the experience of most teachers the objectives of the present driver training course are not fulfilled. The training enables most driving students to get their license, but this is done at the expense of the more professional aspects of the instruction. Most teachers consider the present 13 weeks course too short. The future requirements of the professional drivers are expected to develop into further specialization. Most teachers think that a basic training course aiming at a broad competence, followed by a number of shorter supplementary courses for specialization, would be the best design of professional driver training. The basic and the supplementary courses should add to 20-25 weeks as a minimum, according to most teachers.

PB81-128977 PC **A03**/MF **A01**
Transportation Systems Center, Cambridge, MA.
Bus Driver Training Simulator Assessment.
Final rept.,
Virginia Wright, and Robert Forman. Jan 80, 40p
DOT-TSC-UMTA-80-20, UMTA-MA-06-0074-80-1

The report documents the results of an investigation into the feasibility of developing a driving simulator as a means of teaching safe driving and other operating techniques in the training of bus operators. During this investigation, an Advisory Committee, consisting of representatives from small, medium, and large transit properties and from the American Transit Union, provided data on training programs, training costs, and training needs. The AFL-CIO Appalachian Council Research Department furnished the results of their survey on transit training needs and shared their experiences in developing and implementing a standards bus operator training program. Also, the Massachusetts Bay Transportation Authority made their training data available and arranged a tour of their training facilities. Features required of a driving simulator to meet training needs were identified, and the cost of implementing and operating such a simulator were assessed. This report describes the various types of simulators, the benefits of simulation, and the potential benefits of a driving simulator for transit training. This report also presents an evaluation of existing applicable driving simulators, the tradeoffs of developing costs and operational costs versus the effectiveness of the desired features, and current training programs.

PB81-130718 PC **A12**/MF **A01**
Case Western Reserve Univ., Cleveland, OH.
A Six State Study of Impasse Procedures in the Public Sector.
Final rept.,
Paul F. Gerhart, and John E. Drotning. Sep 80, 260p LMSA/DRA-80/04
Contract DL-J-9-P-7-0149

The study focuses on the effectiveness of a variety of policies and procedures which are utilized to resolve disputes about the terms of labor agreements. The authors have selected six states for study – Iowa, Michigan, New York, Pennsylvania, Ohio, and Wisconsin. Four key public sector occupations were examined through in-depth interviews in each of these jurisdictions.

PB81-133365 PC **A14**/MF **A01**
Pennsylvania Univ., Philadelphia. Dept. of Sociology.
Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
Final rept. 15 Sep 78-14 May 80,
Jane Grisell Murphy. May 80, 309p NCHSR-81-5
Grant PHS-HS-03195

An organizational analysis of affiliation relations between medical schools and hospitals in a geographically bounded region is reported. Evan's theory of organization-sets, and the resource dependence model form the theoretical foundation for investigating the relationship between resource acquisition and the development of affiliations. A model of affiliation networking is developed based on three levels of stratification within classes of hospitals and two levels of stratification within classes of medical schools. Thompson and McEwen's distinction between bargaining and cooperative interorganizational relations is introduced as the basis for examining differences in relationships within contractual groups. Much of the authority and responsibility for the functioning of affiliation relations is delegated to chairmen of departments. The effects of boundary relations on levels and intensities of undergraduate medical education in hospital departments with aspects of the affiliation are examined. The theoretical implications of the results are reported and an assessment is made of the import of the findings with regard to the move toward regionalizing medical education.

PB81-138984 PC **A04**/MF **A01**
John F. Kennedy School of Government, Cambridge, MA. Inst. of Politics.
Seminar on Transition and Leadership for Newly-Elected Mayors. Final Report on Fall, 1977 Program.
Jun 78, 68p HUD-0001239
Sponsored in part by United States Conference of Mayors, Washington, DC, Warner Communications, Inc., Washington, DC, and Sears, Roebuck and Co., Washington, DC.

A 5 - day seminar for 17 newly and recently elected mayors of major U.S. cities was held in 1977. Selection criteria were weighted to assemble a full demographic, geographic, and political mix. A total of 10 mayors were from 'strong mayor' city governments and 7 were from council / manager cities. The seminar was designed to achieve five basic benefits for participants: (1) sharpened insights into the practical problems and opportunities of the transition from political candidate to governmental leader, (2) better understanding of governmental processes, (3) focused instruction in selected substantive areas, (4) intensive exposure to and interaction with knowledgeable practitioners and incumbent mayors, and (5) an opportunity for sustained relationships with other newly elected mayors. The major curriculum sections were the transition road map; the mayor and the press; finance, management, and budgeting; labor relations and collective bargaining; and public safety. Four sessions were led by current or former mayors; two sessions used the case study method. Summary conclusions found a continued need for this kind of program, with an expansion of program materials, time, and participants suggested. An annual seminar, replacing the biennial format, would reach a large percentage of the newly elected mayors now excluded. Seminar materials and schedules, an expense summary, and faculty and participant lists are appended.

PB81-851701 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Professional Continuing Education. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Aug 80,
William V. Sassi. Oct 80, 108p NERACEI NT1931
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover the role of practice in engineering education, innovation, technological leadership and the advanced professional education of engineers, comparisons of education and training professional engineers, and making professional continuing education profitable. (Contains 105 citations.)

PB81-851891 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Educational Level Projections. January, 1970-August, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Aug 80
William V. Sassi. Nov 80, 132p
NERACUSGNT2121
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover the changing requirements of education in industry, status of state education policies, projections of science and engineering doctorate supply and utilization (1982 and 1987), advanced professional educational requirements relative to government and industry, national study of vocational education sys-

tems and facilities, manpower forecasting model for educational planning, and requirements and development of trained manpower resources. (Contains 113 citations.)

5J. Psychology (Individual and Group Behavior)

AD-A091 925/8 PC **A03**/MF **A01**
California Univ., San Diego, La Jolla. Center for Human Information Processing.
Errors in Human Performance.
Final rept. 1 Jun 79-31 May 80,
Donald A. norman. 15 Aug 80, 50p Rept no. 8004
Contract N00014-79-C-0515, ARPA Order-3767

Work on this contract examined various applications of human information processing, focusing on the analysis of human error. As a result of the contract investigations, several areas of potential application were identified. One area of immediate possible application is in the design of human-machine interfaces, with particular concern for aspects of system design that lead to human error, taking into account what is known about human attentional and short-term memory limitations. The major focus of the research effort was devoted to the study of human error, especially those made by highly skilled operators in complex, high-demand systems. A classification scheme for these errors was developed. (Author)

AD-A091 951/4 PC **A02**/MF **A01**
Army Inst of Administration, Fort Benjamin Harrison IN.
Old Theories versus Changing Environment,
Phillips N. Gordon. Oct 73, 18p

The tools available to the military leader are consistent with need satisfactions(s) above the subsistence level. Motivation to perform effectively is a result of important needs. To obtain a high level of motivation, the supervisor must understand the kinds of needs his subordinates seek to satisfy and be willing to help them to satisfy these needs in exchange for effective performance and productivity. A coherent management philosophy is necessary if the leader/manager is to effectively apply the motivational theories of McGregor, Maslow, and Herzberg. Such a philosophy was provided by Dr. Douglas McGregor's Theory X and Theory Y. These theories illustrate the two extremes of management thought and provide an excellent yardstick for the individual leader/manager to measure his personal managerial philosophy. Research has shown that Theory X managers achieve short-term results at the expense of future high performance, while Theory Y leaders achieve high, sustainable results for the organization.

AD-A091 956/3 PC **A08**/MF **A01**
Analytics, Inc., Willow Grove, PA.
Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.
Technical rept. Aug 79-Apr 80,
Wayne W. Zachary. 25 Aug 80, 159p Rept no. 1366-B
Contract N00014-78-C-0743

This report describes one phase of an on-going effort to apply decision aiding technology to Naval Air ASW. Previous portions of the effort have identified key decision-making situations in Naval Air ASW to which decision-aiding is applicable, and specified the decision-aiding techniques that are most appropriate for each of them. This report considers the problem of prioritizing those situations for actual decision aid development, and initiates the aid design process for those situations found to have the highest priority.

AD-A092 048/8 Not available NTIS
Defence and Civil Inst of Environmental Medicine, Downsview (Ontario).
Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance,
Dennis A. Attwood, Raymond D. Williams, and Herbert D. Madill. 6 Nov 78, 12p Rept no. DCIEM-RP-80-RSU-52
Availability: Pub. in Jnl. of Studies on Alcohol, v41 n7 p623-634 Jul 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 106/4 PC **A03**/MF **A01**
Army Research Inst. for the Behavioral and Social Sciences, Alexandria, VA.
Soldier Satisfaction with Life in Restructured Units during Phase I of the Restructuring of the Heavy Division Test.
Final rept.,
Edwin R. Smutz. Sep 79, 41p Rept no. ARI-RR-1232

A questionnaire was designed to gather information on lower ranking (E1 - E4) enlisted men's attitudes toward working and living in their units during the Restructuring of the Heavy Division test at Fort Hood, TX. The questionnaire was administered to unit personnel shortly after they began restructuring and again after the units had been restructured for about four months. The questionnaire was also administered to a control group of soldiers who did not restructure. Results of this study showed that immediately following restructuring there were few differences between soldiers in restructured units and soldiers in nonrestructured units in terms of their attitudes toward working and living in their units. However, after four months, soldiers in restructured units generally expressed more positive attitudes toward working and living in their units than did soldiers from nonrestructured units. However, since the restructured units received publicity, attention, and additional support that was not given to nonrestructured units, these results may not necessarily be generalizeable to other units that might be restructured in the future. (Author)

AD-A092 129/6 PC **A05**/MF **A01**
Decisions and Designs, Inc., McLean, VA.
Pilot Automated Influence Diagram Decision Aid.
Final rept.,
Robert J. Korsan, and James E. Matheson. Dec 78, 79p
Contract N00014-78-C-0100
Prepared in cooperation with SRI International, Menlo Park, CA.

Influence diagrams were originally conceived as a way of visually representing dependencies among random variables. It was recognized that they provide an effective means of communicating probabilistic information in complex, uncertain situations. They were soon generalized to include decision as well as chance variables. An earlier SRI report, Development of Automated Aids for Decision Analysis (Miller, et al., May 1976), describing influence diagrams and showed that they are a more fundamental way of capturing uncertain decision situations than the commonly used decision tree methods. This recognition held the promise that they might provide a basis for more efficient modeling and solution of decision problems. The report reviews the fundamentals of influence diagrams (adapted from Miller et al.) It illustrates with an example of toxic chemical testing how an analyst might use an automated influence diagram system. A first such system was implemented on the IBM 5110 mini-computer. This work allowed the development of computational algorithms in the APL language. Small decision problems are within the capabilities of this system. This development established the feasibility of implementing a comprehensive influence diagram system on a larger machine. Such a system could greatly assist decision makers and decision analysts. The final sections of this report explore questions which arose out of our work. (Author)

AD-A092 179/1 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Homosexuality and the U.S. Military.
Master's thesis,
Michael Thomas McIntyre. Jun 80, 134p

The U.S. military services presently restrict homosexual individuals from entering the armed forces, and discharge gay service members once they have been discovered to be homosexual. As a result of recent social, judicial and political change within the United States, increasing pressure has been placed on the U.S. military to reevaluate and change its homosexuality-related regulations. This paper summarizes recent homosexuality related changes in America, defines homosexuality and analyzes the extent of homosexuality in the military, examines the military's position, and explores the implications of a military policy change which would permit military service by homosexual men and women. (Author)

AD-A092 233/6 PC **A03**/MF **A01**
California Univ., San Diego, La Jolla. Center for Human Information Processing.
Analogical Processes in Learning.
Technical rept. Apr 79-Aug 80,
David E. Rumelhart, and Donald A. Norman. 15 Sep 80, 42p Rept no. 8005
Contract N00014-79-C-0323, ARPA Order-3767

This paper examines the role of analogy and procedural representation in learning. Examples of analogical manipulation of knowledge schemata are presented from several domains, including turtle geometry, kinship terms, and the learning of a computer text editor. The view presented in this paper has a number of implications for instruction and for performance. In particular, the learner or user of a system should be presented with a conceptual model that has the following properties: (a) It is based on a domain with which the student is already knowledgeable and for which the student can reason readily; (b) The target and source domains should differ by a minimum number of spcifiable dimensions; (c) Operations that are natural in one domain should also be natural within the other domain; (d) Operations inappropriate within the target domain should be also by inappropriate within the source domain. (Author)

AD-A092 263/3 PC **A10**/MF **A01**
McDonnell Douglas Astronautics Co.-St. Louis, MO. Engineering Psychology Dept.
Dynamic Target Acquisition: Empirical Models of Operator Performance.
Final rept. Jul 77-Jun 80,
Larry R. Beideman, Frank E. Gomer, and Sheldon H. Levine. Aug 80, 220p MDC-E2305, AFOSR-TR-80-1177
Contract F49620-77-C-0100

The intent of this three-year research program has been to evaluate detection and recognition processes as observers view dynamic sensor imagery for target acquisition purposes. Moreover, we have attempted to specify differences in human performance which can be attributed to inherent differences between IR and TV target signatures. In all experiments, we have emulated the image dynamics associated with a ground-stabilized, narrow FOV sensor. Further, we have used experienced observers as subjects in these experiments. The operational characteristics of certain attack aircraft and imaging missiles led us to examine initial slant ranges to target of 30,000, 15,000, and 5,000 ft. Comparisons of operator performance with simulated IR vs. TV imagery at all initial slant ranges indicated that IR targets were detected more quickly and at greater stand-off ranges than comparable TV targets, especially when targets were embedded in background scenes of medium or high complexity. This occurred even though we simulated optimal visibility conditions, with no significant atmospheric attenuation or distortion of the energy received by the imaging sensor.

AD-A092 290/6 PC **A05**/MF **A01**
Harvard Univ., Cambridge, MA. Dept. of Psychology.
Predictive Models of Human Visual Processes in Aerosystems.
Final rept.,
Richard J. W. Mansfield. Nov 79, 87p AFOSR-TR-80-1191
Contract F44620-76-C-0109, Grant NSF-BNS75-08437

A special eye-movement monitoring and visual display system has been used to investigate human acuity using computer-controlled psychophysical testing procedures. The system can accurately measure eye-movements of less than 1 min. of arc and with the same precision, control the movement of visual targets relative to an observer's retina. The theoretical reconstruction of the response profile of a visual target is complicated by the fact that under ordinary viewing conditions,

even during fixation, that population of active elements in the visual pathway changes constantly. Using the special visual apparatus, it was possible to maintain a target on a fixed set of retinal receptors facilitating an orderly experimental analysis of visual response patterns. The problem of how the human visual system detects oriented targets was examined using a mathematical model whose basic elements are spatial filters representing the receptive field response profiles of visual cortical neurons in the supragranular layers of Area 17. The population response profile proved an accurate predictor of visual sensitivity for foveal targets.

AD-A092 498/5 PC **A03**/MF **A01**
Decisions and Designs, Inc., McLean, VA.
Decision Flexibility in a Learning Environment.
Final rept.,
Miley W. Merkhofer, and William M. Saade. Dec 78, 41p
Contract N00014-78-C-0100
Prepared in cooperation with SRI International, Menlo Park, CA.

A problem example is analyzed with the object of identifying the characteristics of a decision environment that influence the choice of decision flexibility. The results support a growing concern that current methods of analysis tend to produce plans that are insufficiently flexible. A sensitivity analysis clarifies how the desired level of flexibility depends on uncertainty, information, the cost of retaining flexibility, and the cost of decision error. Procedures are suggested for modifying current methods of analysis to account more accurately for the value of flexibility. (Author)

PB81-125536 PC **A06**/MF **A01**
Maryland Univ., College Park.
Illness Behavior in Mid-Life Women. Executive Summary.
Final rept. 1 Jul 79-30 Jun 80,
Carole Cox. Jul 80, 123p NCHSR-80-57
Grant PHS-HS-03667-01
Doctoral thesis.

This study investigated the relationship of specific social-psychological factors to illness behavior in a sample of mid-life women. Data were gathered through the use of anonymous mail questionnaires. The results of the analyses indicated that the quality of social supports as defined by the intimacy of relationships, life satisfaction, self-esteem, feelings of success, and the recent illness or death of someone close were significantly related to illness behavior. The findings suggest that these factors should be considered by health professionals attempting to understand or treat such behavior.

5K. Sociology

AD-A092 155/1 PC **A07**/MF **A01**
Science Applications, Inc., McLean, VA.
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
Final rept. Dec 79-Mar 80,
B. Tullington, H. Strickland, and D. Gaebel. Apr 80, 141p Rept no. SAI-80-113-W/A-VOL-2
Contract DAMD17-79-C-9107
See also Volume 1, AD-A092 203.

Forward Support Company, Combat Engineer Company, Supply and Service Company and Forward Communication Company organizations are analyzed to examine potential unit effectiveness before and after combat damage assuming personnel incapacitation from hypothetical drug abuse distributions of 10%, 20%, 30%, and 40% among those personnel less than 25 years of age. The relative risk to loss of unit effectiveness from drug abuse is quantified, and personnel functions key to unit mission accomplishment are identified 'by MOS) before and after combat damage. Additionally, equipment critical identified (by MOS) before and after combat damage. Additionally, equipment critical to unit effectiveness is identified and its impact on unit capability discussed. The impact of expanding the age threshold from 25 to 28 is examined and found to be significant for HHC, Mechanized infantry Battalions. (Author)

AD-A092 173/4 PC **A03**/MF **A01**
Coastal Area Planning and Development Commission, Brunswick, GA.
A Coordination, Education, and Mitigation Model for Disaster Preparedness in Coastal Areas.
Summary rept.
Sep 80, 49p
Contract EMW-C-0365

A study was conducted to: (1) research existing storm preparedness efforts undertaken by state/substate regional agencies throughout the country and identify ways in which a comprehensive program could be most effectively implemented at the substate/regional level, (2) outline the nature of an advisory council for a hazard mitigation program, (3) expand the role for mitigation activities to include multi-hazards, (4) research the means of securing maximum involvement of various state, federal, and local agencies in a demonstrative activity, and (5) identify the implications of such a project to other coastal areas and explore the role of national interest groups or other institutional entities in maximizing the utility of conclusions and processes developed in other geographic settings. The coastal area of Georgia, covering an eight-county area and served regionally by the Coastal APDC, was used as the primary study area for the research conducted. It is an area covering 3,785 square miles with a population of approximately 350,000 in 1980. The contrast between slow, rural and rapid, urban growth provides a representative area in which to conduct a study of disaster preparedness. In addition to the use of the Coastal APDC region as the primary study area, research was conducted throughout the Atlantic, Pacific, Gulf, and Great Lakes states.

AD-A092 203/9 PC **A10**/MF **A01**
Science Applications, Inc., McLean, VA.
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
Final rept. Jun-Nov 79,
B. Tullington, H. Strickland, and R. Griner. Dec 79, 225p Rept no. SAI-80-113-W/A-VOL-1
Contract DAMD17-79-C-9107
See also Volume 2, AD-A092 155.

Armor, artillery & infantry company-size unit organizations are analyzed to examine potential unit effectiveness before and after combat damage, assuming personnel incapacitation from hypothetical drug abuse distributions of 10%, 20%, 30%, among those personnel less than 25 years of age. The relative risk to loss of unit effectiveness from drug abuse is quantified & personnel functions key to unit mission accomplishment are identified before & after combat damage. Additionally, equipment critical to unit effectiveness is identified & its impact on unit capability discussed. Artillery units, particularly Headquarter Battery, are at greater risk to functional failure from drug abuse than are armor or infantry units. (Author)

PB81-123879 PC **A09**/MF **A01**
Clarke and Rapuano, Inc., New York.
Evaluation of Alternative Interment Methods for National Cemeteries.
Research study rept. (Final),
Raymond J. Heimbuch, Frank C. Marcellino, and Bradford M. Greene. Apr 80, 186p VA-80/0001

The VA, through Public Law 93-43, became responsible for the management of virtually all national cemeteries in 1971. The National Cemetery System (NCS) of the Department of Memorial Affairs (DMA) of the Veterans Administration (VA) operates over one hundred cemeteries in 37 states and Puerto Rico. The VA has been continuing the past policy of offering a dignified burial for all veterans and their dependents without discrimination while seeking constantly to make their methods more cost effective. The principal purpose of the study has been to determine which alternative methods of interment are appropriate for the NCS and are economically effective. Alternative methods are being employed by many private cemeteries and therefore it was in the private sector that a variety of alternative methods were observed and evaluated. Several techniques were used for data collection which included a questionnaire sent to 77 national cemeteries currently providing interment services. There are appendices which include a glossary of terms, analysis of the questionnaire and references.

PB81-125379 PC **A15**/MF **A01**
Human Interaction Research Inst., Los Angeles, CA.
Quality of Worklife Programs: A Preliminary Technology Assessment,
Edward M. Glaser, and Paul D. Greenberg. Jun 79, 329p NSF/PRA-7706495
Grant NSF-ERS77-06495
See also report dated 1977, PB-298 913.Portions of this document are not fully legible.

The study of quality of worklife (QWL) improvement efforts was composed of three major substudies, each with separate but interrelated objectives. A preliminary technology assessment of a small sample of QWL improvement programs in manufacturing plants was conducted to determine their primary and secondary effects and, from this assessment, to synthesize tentative implications for public policy. The perceptions of employees with regard to various aspects of their working and nonworking lives were sampled using questionnaires and individual interviews. Some spouses were interviewed and objective data were collected on a number of dimensions of organizational performance, such as absenteeism, work-related accidents, productivity, and grievance rate. The attitudes and roles of labor unions with respect to the development of QWL improvement efforts were characterized. Seventeen union officials from fifteen major U.S. unions were interviewed. The role of universities (schools of business and management) in the diffusion of the technology of QWL improvement programming was examined. A survey mailed to 114 leading business and management schools attempted to determine the extent to which QWL concepts, issues, and techniques are being taught; typical curriculum content; program organization and genesis; evidence of utilization; and personal attitudes and perspectives of the respondents. The data gathered during these substudies are reported.

PB81-125650 PC **A04**/MF **A01**
Netherlands Inst. for Preventive Medicine TNO, Leiden.
Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator),
M. Soede. May 77, 56p
Text in Dutch.

Most research in the area of mental exertion is carried with tasks which require much attention, and thus imply a very conscious information processing. In those cases, the diversion of drugs or alcohol will certainly show a worsening of performances. The supposition was that tasks which are only routine will show other results. On a bike simulator, where a subject has to balance and follow an unpredictable course, both aspects of one task are combined. In spite of a large variety in the outcomes, the results point to a non-specific effect of alcohol on the driving behavior. In other words, biking on a straight line, as well as balancing on a straight line, worsens.

PB81-125726 PC **A07**/MF **A01**
Nevada Univ., Las Vegas.
Evaluation of HEW - Assisted Programs to the Hispanic Population of Clark County, Nevada.
Final rept.,
James Frey. Dec 78, 138p HEW/REG-9-77-04

The study evaluated the accessibility and availability of HEW-assisted programs to the Hispanic population of Clark County, Nevada. The study (1) evaluated existing HEW programs to ascertain their correlation to consumer-perceived needs; (2) examined barriers confronted by the Hispanic population in obtaining HEW assistance; and (3) examined ways in which various levels of government and community officials and representatives can cooperate to make recommendations for the development of comprehensive services which are more responsive to the needs and problems of this population group.

PB81-128670 PC **A14**/MF **A01**
Institute for Community Design Analysis, Inc., New York.

Factors Influencing Crime and Instability in Urban Housing Developments,
Oscar Newman, and Karen A. Franck. c1979, 315p HUD-0001788
Grant LEAA-76-NI-99-0036

The purpose of this study was to determine which social, physical, and managerial characteristics of federally assisted urban housing developments are most important in causing crime, fear of crime, and instability. The causal model for this study is largely based on earlier defensible space theory and research. The 63 sites in the study are federally assisted, moderate-income developments in Newark, St. Louis, and San Francisco. These developments consist of row house, walk-up, and high-rise buildings with a varied composition of rent-subsidized residents. Path analysis is used to estimate the model and to calculate total, direct, and total indirect effects. Ten chapters present: (1) the causal model; (2) study sites and sample residents; (3) measurement of variables; (4) use of path analysis; (5) effects of building size and accessibility; (6) effects of social characteristics; (7) effects of police and guard service; (8) summary of major findings; (9) discussion; and, (10) policy implications. Appendices, supplementary tables, and a bibliography are included.

PB81-138968 PC **A09**/MF **A01**
Department of Housing and Urban Development, Washington, DC. Office of Policy Development and Research.
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study,
Christopher Wye, David Kaminsky, and John Pickering. Aug 77, 192p HUD/PDR-269(2), HUD-0000181

A structured survey was conducted to evaluate physical, financial, administrative, and problem characteristics of 338 insured, subsidized multifamily housing projects in one of three financially difficult categories (default, assignment, or acquisition). Research was conducted in 1977 using a two - part instrument; part one was designed as a data collection mechanism to compile a detailed case history on each of 65 projects, while part two was designed to categorize and prioritize major problems of each project in a way that permitted rapid data aggregation and summarization. Major problems related to project design, site, physical structure, administration, tenant attributes and behavior, and neighborhood conditions; HUD processing and servicing; local, State, or other Federal Government impacts; and general market conditions. Problems frequently occurring in combination were inadequate project income, inadequate HUD management of multifamily loans, and inadequate onsite project management. Lack of project income was due to overestimation of income and underestimation of expenses during underwriting, unexpected rapid growth in expenses, or the preceding two factors in combination. Specific project administration deficiencies were reflected in the arrangement of financing and working capital by the project owners / developers and their supervision of project construction and in project management functions like rental, maintenance, fiscal, and personnel practices. HUD management resources to carry out loan management and property disposition tasks were deficient with regard to the number of professional staff, skills among existing professional staff, monitoring and management information systems, program tools and resources, and secretarial and clerical support. Housing management staff functions were lacking in such areas as goal definition and structure, policy and regulatory guidance, substantive decisionmaking in complex situations, and accountability. Preliminary findings suggest two objectives for the development of a program to assist troubled housing projects: (1) the program must be flexible since each project faces a unique combination of problems; and (2) the program must address project income, HUD management, and onsite project management problems since these frequently occur in combination. Information on the study methodology, data collection instruments, and supporting data are contained in appendices.

PB81-138976 PC **A02**/MF **A01**
Department of Housing and Urban Development, San Francisco, CA. Office of Program Planning and Evaluation.
Monitoring in Urban Counties.
12 Jan 76, 11p HUD-0001147

This analysis of a draft Community Development Monitoring Handbook examines its applicability to urban counties. The handbook was developed by the Regional Office of Community Planning and Development as part of a proposed monitoring policy for the Community Development Block Grant (CDBG) program. Urban counties differ from other CDBG grantees because they consititute a relatively new HUD grantee classification and represent diverse jurisdictions. The present analysis was based on a program analyst's review of the handbook and on interviews with 8 of the 11 community development representatives handling urban counties' in Region IX. Results showed that urban counties' ability to represent other incorporated jurisdictions raises monitoring issues which the handbook should include. The relationship between a county and participating cities varies from county to county and raises such issues as the organizational level at which HUD monitoring should occur and whether counties' monitoring and technical assistance capabilities should be monitored. In addition, several issues specific to urban counties should be considered in the review of CDBG applications. The monitoring handbook adequately addresses the needs of urban counties eligible solely on the basis of their unincorporated areas. Finally, many urban counties have the needs and concerns of first - year applicants in other CDBG applications.

PB81-138992 PC **A19**/MF **A01**
Urban Inst., Washington, DC.
Services in Support of Housing Search: How Necessary and Effective in the Experimental Housing Allowance Program,
Elizabeth Bernsten. Mar 80, 445p HUD-0001398
Contract HUD-H-2162R

The Experimental Housing Allowance Program is evaluated in terms of the need and impact of supportive services to households in search of new housing units. The services examined are defined as administrative activities intended to help enrolled clients become recipients and improve the quality of their housing. Program and housing information services and agency spatial advice about where to search were tested in three experiments of the Housing Allowance Program, but Supply Experiment data have not been available. A wide variety of additional Administrative Agency Experiment services responded to particular search problems of individual households. Results show that clients facing a strict standard in tight and segregated housing markets were helped by program and housing information sessions. Greater improvement in movers' housing quality and satisfaction was shown by Demand Experimentals influenced by agency spatial advice. No evidence was found to support the hypothesis that those who used services consisted disproportionately of shoppers who would have succeeded without this help. The necessary data were not available to evaluate individualized problem - responsive services. Suggestions for future research are offered. Supporting data and information are provided in the appendices, followed by a bibliography.

PB81-139008 PC **A02**/MF **A01**
Urban Inst., Washington, DC.
Enforcing Housing Quality Standards: Some Findings From the Experimental Housing Allowance Program,
Michael Springer. Jun 78, 23p HUD-0001401
Contract HUD-H-2162R

Some significant findings of the Experimental Housing Allowance Program are reviewed with attention given to the enforcement of housing standards and some general implications for programs involving the maintenance, rehabilitation, or leasing of existing dwelling units. Findings showed that rent levels were not good enough proxies for determining the quality of specific units and that actual inspection of each unit was required. The average costs of locally - conducted inspections were not prohibitive. Minor variations in similar housing codes were found to have important consequences for failure rates, the kinds of deficiencies identified, and the costs of required repairs. Application of housing quality standards were shown to result in reduced participation in a program, especially among the nonelderly, minorities, larger households, and those who had to move in order to qualify for benefits. The enforcement of standards, in combination with a modest demand - side stimulus, did not appear to have resulted in more than slight upgrading of local housing stocks. Greater Federal guidance was suggested in the kinds of housing codes used in the implementation of Federal programs by localities. An indication of the kinds of interventions in private choices that are likely to contribute to improvements in housing units was also suggested. Tabular and graphic data and references are provided. (Author abstract modified).

PB81-139016 PC **A04**/MF **A01**
Urban Inst., Washington, DC.
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,
John Trutko, Otto J. Hetzel, and A. David Yates. Apr 78, 65p UI-216-34, HUD-0001404
Contract HUD-H-2162R

This paper compares program features and experiences from Great Britain's Rent Allowance Program with those from the Experimental Housing Allowance Program (EHAP) in the United States, concentrating on four aspects of the two programs -- program participation, outcomes, administration, and costs. The British program is essentially an income - transfer program that supplements the incomes of recipients and attempts to eliminate some of the inequalities within the established system of housing subsidies. No attempt is made to ensure a minimum level of housing quality under the program. Conversely, allowance payments under EHAP are designed both to provide low - income families with supplemental resources for housing expenditures and to encourage or require recipients to improve the quality of their housing. Similarities and differences in the features of the two programs are delineated. In comparing the experiences of each, it is noted that the participation rate, as well as the reasons for nonparticipation among eligible households, is similar for both programs. One major difference is the higher percentage of elderly among the recipients of allowance payments in the British program. The main effect of the allowance payments in both countries has been a reduction in housing costs relative to income. However, allowance payments have had virtually no perceived effect, to date, in either country on the price of local housing, the quality of neighborhood housing stock, or the composition of neighborhoods. Generally, administrative costs of EHAP are higher than that of the British program, partly because of EHAP's emphasis on making allowance payments only to recipients who attain certain minimum levels of housing quality. Footnotes and a bibliography are included.

PB81-139024 PC **A02**/MF **A01**
Urban Inst., Washington, DC.
Integrated Analysis of the Experimental Housing Allowance Program: Sixth Year Report.
Working paper.
Oct 78, 21p HUD-0001410
Contract HUD-H-2162R

This sixth annual report on the Urban Institute's research is part of the Experimental Housing Allowance Program (EHAP) and covers the period from October 1, 1977, through September 30, 1978. The Integrated Analysis was undertaken to ensure consistency of program design, data, and analysis of the three housing experiments (the Demand Experiment, the Administrative Agency Experiment, and the Supply Experiment). It was also conducted to overcome many of the deficiencies that are inherent in the design of any one of the three experiments, and to contribute to a balanced and comprehensive understanding of the total EHAP. The report organizes the Institute's work according to the work plan for the Integrated Analysis submitted to HUD and approved on May 26, 1978. The report discusses (1) the design for an Integrated Analysis final report, (2) research and analysis activities, (3) policy memoranda, and (4) continued development of the multiexperimental data base. Tables and footnotes are included. Appendices list individuals involved in the Integrated Analysis work and Integrated Analysis documents generated since 1972. (Author abstract modified).

PB81-139040 PC **A07**/MF **A01**
Urban Inst., Washington, DC.
Metropolitan Housing and the Income Tax,
Michael W. Andreassi, and C. Duncan MacRae.
Aug 78, 147p HUD-0001425
Contract HUD-H-2162R

The effects of the progressive tax structure on metropolitan housing markets are analyzed, using the Urban Institute Housing Model, which simulates 10 - year changes in urban housing patterns. Under existing tax structure, owner - occupants are allowed to select their optimal tax decision, based on utility maximization. Renters are assumed to benefit from the tax provisions aiding real estate investors through a reduction in prices charged. Following an overview of the theoretical structure of the housing model used and the changes necessary to incorporate the progressive tax structure, the model is simulated for the 1960 - 1970 and 1970 - 1980 periods on prototypical U.S. cities representative of broad urban area types. Effects of alternatives to the present owner - occupant provisions are examined over the 1970 - 1980 period. Four tax policies under two general categories were examined. One category consists of the elimination of all owner - occupant deductions coupled with a general tax reduction which leaves total tax revenue unchanged. The effects of this policy were a decrease in housing consumption for all income groups and a shift in the distribution of taxes paid by income toward the upper income group. The second category tested consists of the substitution of alternative forms of the deduction designed to enhance the equality of the tax system and leave total tax revenue constant. This is done with a tax credit equal to some portion of the presently allowable homeowner deductions. This policy caused increased housing consumption for middle - income and lower - middle - income groups and a decrease for upper - income groups; taxes increased for the latter and decreased for the former. Indirect effects of the policy simulations were housing market and spatial impacts. All of the policies examined had a beneficial impact on some part of the center city. Tabular data are presented.

PB81-139057 PC **A03**/MF **A01**
Urban Inst., Washington, DC.
Urban Housing with Discrete Structures,
C. Duncan MacRae. Aug 78, 34p UI-1116, HUD-0001426
Contract HUD-H-2162R

A stack algorithm is developed and analyzed for determining equilibrium in a model of urban housing with discrete structures. The algorithm ensures that a dwelling's competitive supply of services is equal to the demand for those services by the resident household and that, given housing market prices, the household would not prefer to live in any other dwelling. Using the Urban Institute housing model as an example, the stack algorithm was used to calibrate the model for the six metropolitan areas for which DeLeeuw and Struyk had already calibrated the model with their algorithm. On the demand side, the stack algorithm implies lower minimum levels of consumption and a more important role for neighborhood externals than does the DeLeeuw - Struyk algorithm. On the supply side, the stack algorithm yields a lower structure depreciation rate and lower supply elasticity. Whetner using the original parameters for the Urban Institute model or the recalibrated parameters, the stack algorithm indicates that there was greater price discounting of existing dwellings below the new dwelling price in 1970 than does the DeLeeuw - Struyk algorithm. While neither algorithm dominates in explanatory power as measured by mean square error, the stack algorithm is more efficient in obtaining a solution. Hence, with the stack algorithm, a model of discrete housing can be enhanced in ways not previously feasible in a computational manner; e.g., through the addition of more households, dwellings, or zones. Graphic data and references are provided. (Author abstract modified).

PB81-139065 PC **A04**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 3. Housing Assistance Supply Experiment,
Patricia Boren. Feb 80, 70p RAND/N-1364-HUD, HUD-0001427
Contract HUD-H-1789

This codebook describes the data on community attitudes collected in the third (wave 3) survey of landlords conducted in Brown County, Wisc., (Site I) from April through August 1976. For each question in the 'attitude module' of the survey instrument, this codebook reproduces the exact text, specifies all permissible responses, and provides a tabulation of the unweighted responses. Where applicable, individual questions are annotated with instructions to the survey staff that affect the interpretation of responses. Response codes for each open - ended question are aggregated and summarized in a single set of marginals indicating the total number of respondents whose comments received a given code. Audit codes show the incidence of item nonresponse for each response field. They highlight any extreme values that may indicate a need for special analysis to validate the data or explain abnormal distributions. The cumulative distributions of response values enable the user to calculate measures of central tendency and dispersion such as the median and interquartile range (useful information when planning a detailed analysis).

PB81-139073 PC **A13**/MF **A01**
RAND Corp., Santa Monica, CA.
Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment,
Kenneth Wong, and Patricia Boren. Feb 80, 276p RAND/N-1383-HUD, HUD-0001428
Contract HUD-H-1789

This codebook documents data from the third survey of landlords conducted in Brown County, Wis., and is part of a series from the Housing Assistance Supply Experiment (HASE). For each derived variable, the codebook details the construction, specifies all permissible responses, and provides a tabulation of the unweighted responses. The quality of the derived variable data is addressed in the overall audit of this landlord survey, which is published separately. After documentation and auditing, the data are used in various HASE analyses. HASE monitored the effects of experimental housing allowance programs by surveying a marketwide sample of about 2,000 residential properties in each of 2 midwestern markets. The survey gathered data on: (1) characteristics and circumstances of the owner and his activities in the real estate market; (2) the owner's perceptions of the neighborhood housing market and the investment prospects of his property; (3) the owner's management policies and his relations with tenants and suppliers of supporting housing services; (4) the owner's mortgage financing; (5) income and expenses from the property during the preceding year; and (6) the owner's attitude toward the allowance program. This codebook is a basic reference document enabling users to interpret the responses and helping them plan tabulations or other analyses. Tables, a glossary, and two appendices with survey audit codes and a debt algorithm are included. (Author abstract modified).

PB81-139081 PC **A99**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
Patricia Boren. Mar 80, 898p RAND/N-1358-HUD, HUD-0001438
Contract HUD-H-1789

This codebook, one in a series documenting survey materials used in the Housing Assistance Supply Experiment (HASE), describes data collected in the wave 4 household survey of Brown County, Wis., from April through August 1977. The HASE monitors the effects of experimental housing allowance programs operating in two midwestern housing markets by regularly surveying a marketwide sample of about 2,000 residential properties are interviewed annually; observable characteristics of residential buildings and their environs are recorded at less frequent intervals. The household survey in Brown County provides data on the following: household composition and social background; tenure, characteristics, and condition of housing units; tenant perceptions of tenant - landlord relationships; perceptions of neighborhood and social participation; housing expenses; mobility and housing history; occupational history and income; and attitudes toward allowance programs. Responses of tenants and owners of single - family and multiple - unit dwellings, mobile home residents, and lodgers are detailed. Survey procedures, data preparation, and file development are outlined. Organization and use of the codebook are explained. Information on Brown County neighborhoods, a glossary, and a list of audit codes are appended.

PB81-139099 PC **A08**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Survey of Residential Buildings, Site I, Wave 3. Housing Assistance Supply Experiment.
Patricia Boren. Mar 80, 166p RAND/N-1405-HUD, HUD-0001441
Contract HUD-H-1789

This codebook documents data from a survey of residential buildings conducted in Brown County, Wis., and is part of a series from the Housing Assistance Supply Experiment (HASE). For each question in the survey, the codebook reproduces the exact text, specifies all permissible responses, and provides a tabulation of the unweighted responses. HASE monitors the effects of experimental housing allowance programs by surveying a marketwide sample of about 2,000 residential properties in each of 2 midwestern markets. The survey includes interviews with the owners and occupants observed and recorded physical characteristics of the residential buildings, and general characteristics of the immediate neighborhoods. The codebook serves as a basic reference document by summarizing the data gathered in the survey and providing detailed guidance for their use. The quality of the survey data is addressed in the overall audit of this residential building survey which is published separately. After documentation and auditing, the data are used in various HASE analyses. Tables and two appendices containing a glossary and audit codes are included. (Author abstract modified).

PB81-139107 PC **A03**/MF **A01**
Department of Housing and Urban Development, Washington, DC. Office of Policy Development and Research.
Housing Production with Non Profit Sponsors.
Nov 75, 35p HUD-0001442

The unique services provided by nonprofit housing sponsors are identified, and the costs of such services are outlined. HUD has offered technical assistance, no - interest seed money loans, and no - down - payment insured mortgages to nonprofit housing sponsors under the assumption that the cost - benefit of such housing is superior to limited dividend sponsored housing. This study examines the characteristics of nonprofit housing projects and compares them to limited dividend sponsored housing projects, followed by a discussion of the Section 106 program, which provides funds for technical assistance to nonprofit sponsors and permits no - interest seed money loans to facilitate the development of nonprofit sponsorship are compared to the costs of limited dividend sponsorship. For similar projects with similar tenants, nonprofit sponsors cost the Federal Government .009 of total development costs more per year than limited dividend sponsorship. Nonprofit sponsors, however, are serving more very low - income families, elderly families, and broken families than are limited dividend sponsors, primarily because current subsidy programs offer sponsors no economic incentive to rent to poor families. Nonprofit sponsors are apparently more willing to serve very poor families, even in the absence of economic incentives. The appendix provides supporting calculations and the text of Section 106.

PB81-139115 PC **A04**/MF **A01**
Brill (William) Associates, Inc., Annapolis, MD.
Training Manual for Interviewers.
Dec 78, 51p HUD-0001445
Contract HUD-H-2249R

This manual presents the procedures to be used in interviewing residents and in recording and editing the questionnaires during the administration of the Household Security Survey. The survey is designed to provide public and low - income housing developments with information on their security

problems and on how residents feel about their housing environment and the safety of their homes. Specific interviewing techniques are discussed, including gaining entry, establishing rapport, developing interviewing procedures, and closing an interview. A checklist for interviewers is provided to help them achieve successful interviews. General and specific techniques are discussed for interviewers to obtain clear, complete, and relevant answers to questions found in the questionnaire, including advice on coding, precoded questions, and open - ended questions. In addition, specific techniques are enumerated for recording answers accurately and for editing the interview. Finally, field procedures are explained. The manual emphasizes the importance of dressing conservatively and comfortably, remembering to smile and be polite and considerate, and acting as a guest behaves in a person's home.

PB81-139123 PC **A05**/MF **A01**
Brill (William) Associates, Inc., Annapolis, MD.
Field Supervisor Manual.
Dec 78, 89p HUD-0001446
Contract HUD-H-2249R

This manual provides guidance to individuals or groups who wish to administer the Household Safety and Security Survey. The survey is designed to provide public and low - income housing developments with information on their security problems and on how residents feel about their housing environment and the safety of their homes. This information is then used to develop a comprehensive security plan to improve both the site and the total housing environment. Specifically, this manual is designed to assist the individual or group assigned the task of field supervisor to implement the survey. The manual includes guidelines for the recruitment and training of interviewers, descriptions of the special issues which can be anticipated in surveying public and low - income housing developments, and identification of potential problems which may arise during the implementation of the survey. Recommended administrative and procedural steps to be followed such as selecting the sample, editing the interviews, compensation of interviewers, and verifying that interviews were conducted properly are also presented. The manual includes the survey instrument, a mini - survey instrument, administrative forms and letters, and tables. (Author abstract modified).

PB81-139131 PC **A06**/MF **A01**
Department of Housing and Urban Development, Washington, DC. Office of Housing.
Multifamily Property Utilization Task Force.
Final rept.,
Mary Bruce Batte, and James B. Mitchell. May 78, 119p HUD-H-316, HUD-0001448

Problems faced by subsidized multifamily projects were studied in 1977, and a program was conceived to protect the Federal Government's investment in low - income housing developed under Section 236 and Section 221 (d)(3) programs. Problems frequently occurring in subsidized multifamily projects concerned inadequate project income, particularly to cover maintenance and utility costs; inadequate HUD management of multifamily loans; and inadequate onsite project management of such functions as tenant screening, rent collection, and maintenance. Problems of troubled projects were compounded by general neighborhood decline. If trends continue unchecked, HUD's inventory of assigned and acquired projects may rise to more than 3,000 by 1982; average major repair and capital needs of the typical project (114 units) are estimated at $53,000 for a defaulted project, $99,000 for an assigned project, and $611,000 for an acquired project. It is concluded that most problems are manageable and can be resolved by a four - step program: (1) flexible subsidy mechanism to assure a project's financial stability and to maintain reasonable tenant rent levels; (2) improved onsite management of all administrative, financial, physical, and social management functions; (3) property disposition initiatives to reduce mortgage assignments, foreclosures, and acquisitions; and (4) State and local government assistance in the disposition of HUD - owned properties and in the workout of acquired properties. Information on repair standards, project manager qualification standards, and subsidized multifamily housing programs is appended.

PB81-139149 PC **A13**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
Patricia Boren. Mar 80, 282p RAND/N-1354-HUD, HUD-0001449
Contract HUD-H-1789

This codebook documents survey materials used in the final survey of residential buildings conducted in Brown County, Wis., as part of the Housing Assistance Supply Experiment (HASE). The survey was administered from August through October 1977. Survey data were gathered through extensive observation of buildings and of the immediate neighborhoods. Data covered such information as the building's placement on the lot, the state of repair, the condition of interior public areas, street maintenance, and litter. This codebook, one of a series, summarizes the data gathered in the survey and provides detailed guidance for their use. It is intended as a basic reference document, to enable data users to interpret the responses to nearly 400 questions and to plan tabulations or other analyses. For each question in the survey instrument, the codebook reproduces the exact text, specifies all permissible responses, and provides a tabulation of the unweighted responses recorded in the preliminary master file of survey records. Where applicable, individual questions are annotated with survey staff restrictions affecting the interpretation of responses. Appendices present a glossary, audit codes, and photographs used for reference in the survey.

PB81-139156 PC **A08**/MF **A01**
RAND Corp., Santa Monica, CA.
Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
Patricia Boren, and Sally Trude. Mar 80, 156p RAND/N-1391-HUD, HUD-0001450
Contract HUD-H-1789

This codebook describes a set of variables derived from data collected in the final survey of residential buildings conducted in Brown County, Wis., as part of the Housing Assistance Supply Experiment (HASE). The survey was administered from August through October 1977. Survey data were gathered through extensive observations of buildings' physical characteristics and of the immediate neighborhoods' general characteristics. Data covered such information as building placement on the lot, state of exterior repairs, condition of interior public areas, street maintenance, and litter. This codebook, one of a series, is intended as a basic reference for data file users. It enables users to interpret the responses and plan tabulations or other analyses. It documents a set of variables derived from the original survey variables. The derived variables consist of (1) recodes, aggregations, and other transformations of the original responses; (2) data collected in a related survey or found in another data base relating to the same housing unit or respondent; and (3) sample selection indicator. For each derived variable, the codebook discusses the construction, specifies all permissible responses, and provides a tabulation of the unweighted responses recorded in the final master file of survey records. Extensive tables, footnotes, a glossary, an index of variables, and an appendix presenting survey audit codes are included.

PB81-139164 PC **A10**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment,
Patricia Boren, and Carol Hillestad. Mar 80, 213p RAND/N-1361-HUD, HUD-0001451
Contract HUD-H-1789

This codebook, one in a series documenting survey data and derived variables from the Housing Assistance Supply Experiment (HASE), describes the Wave 4 survey of neighborhoods in Brown County, Wis., administered from November 1976 through September 1977. HASE monitors effects of experimental housing allowance programs operating in two midwestern housing markets by regularly surveying a marketwide sample of about 2,000 residential properties. Brown County has been divided into 108 residentially homogeneous neighborhoods (84 urban and 24 rural). In contrast to most HASE surveys which are based on interviews and addressed to a stratified probability sample of the county's residential properties, the neighborhood survey is based on secondary research and direct observation and concerns the entire county. The neighborhood survey has two parts, each with its own instrument (description of neighborhoods from local sources and observation of neighborhood street segments). The local source instrument deals with access to facilities and services (highways, arterials, public streets, planned highways, and railroads), air pollution, and school, crime, and employment statistics. The street observation instrument covers land use, special features, and quality and condition ratings. Detailed information about questions in and responses to the Wave 4 survey is provided. Extreme data values indicating the need for special analysis are highlighted, and measures of central tendency and dispersion are calculated to aid in planning detailed analysis. Neighborhood census data and audit codes used in the codebook are appended. A glossary is provided.

PB81-139172 PC **A05**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
Patricia Boren, and Christina Witsberger. Mar 80, 85p RAND/N-1365-HUD, HUD-0001452
Contract HUD-H-1789

This codebook documents data from a survey of community attitudes for the final survey of landlords conducted in Brown County, Wis., and is part of a series from the Housing Assistance Supply Experiment (HASE). The codebook documents survey variables pertaining to landlord attitudes and associated variables derived from them, including a landlord sample - selection indicator and record weight. For each variable, the codebook reproduces the exact text of the attitude question or describes the construction of the derived variable, specifies all permissible responses, tabulates the response distributions, and gives to the survey staff the instructions that affect the interpretation of responses. HASE monitors the effects of experimental housing allowance programs by surveying a marketwide sample of about 2,000 residential properties in each of 2 midwestern markets. The attitude survey gathered data about the landlords' awareness and evaluation of the housing allowance program by asking respondents whether they had heard of the program, what they had heard, how and why they evaluated it, and what effects they thought the program had had on their properties and neighborhoods. Tables, a glossary, and an appendix of audit codes are included. (Author abstract modified).

PB81-139180 PC **A12**/MF **A01**
RAND Corp., Santa Monica, CA.
Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,
Kenneth Wong, and Patricia Boren. Mar 80, 272p RAND/N-1384-HUD, HUD-0001453
Contract HUD-H-1789

This codebook documents data from the fourth survey of landlords conducted in Brown County, Wis., and is part of a series from the Housing Assistance Supply Experiment (HASE). For each derived variable, the codebook details the construction, specifies all permissible responses, and provides a tabulation of the unweighted responses. The quality of the derived variable data is addressed in the overall audit of this landlord survey which is published separately. After documentation and auditing, the data are used in various HASE analyses. HASE monitored the effects of experimental housing allowance programs by surveying a marketwide sample of about 2,000 residential properties in each of 2 midwestern markets. The survey gathered data on (1) characteristics and circumstances of the owner and his activities in the real estate market; (2) the owner's perceptions of the neighborhood housing market and the investment prospects of his property; (3) the owner's management policies and his relations with tenants and suppliers of supporting housing services; (4) the owner's mortgage financing; (5) income and expenses from the property during the

preceding year; and (6) the owner's attitude toward the allowance program. Tables, a glossary, and two appendices containing survey audit codes and a debt algorithm are included. (Author abstract modified).

PB81-139198 PC **A06**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Attitude Module of the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
Patricia Boren. Mar 80, 117p RAND/N-1370-HUD, HUD-0001454
Contract HUD-H-1789

This codebook, one in a series documenting survey materials used in the Housing Assistance Supply Experiment (HASE), describes community attitude data collected in the wave 4 household survey of Brown County, Wis., from April through August 1977. The HASE monitors the effects of experimental housing allowance programs operating in two midwestern housing markets by regularly surveying a marketwide sample of about 2,000 residential properties in each site. Owners and occupants of these properties are interviewed annually; observable characteristics of residential buildings and their environs are recorded at less frequent intervals. The household survey in Brown County provides data on the following: household composition and social background; tenure, characteristics, and condition of housing units; tenant perceptions of tenant - landlord relationships; perceptions of neighborhood and social participation; housing expenses; mobility and housing history; occupational history and income; and attitudes toward housing allowance programs. Data about community awareness and evaluation of housing allowances are detailed for both program clients and the general public. Data collection and analysis procedures are described, as well as auditing and file development mechanisms. Organization and use of the codebook are explained. Audit codes are noted in an appendix. (Author abstract modified).

PB81-139206 PC **A14**/MF **A01**
RAND Corp., Santa Monica, CA.
Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
Roberta Allen, Evelyn Casper, and Sally Trude. Mar 80, 301p RAND/N-1376-HUD, HUD-0001455
Contract HUD-H-1789

This codebook, one in a series, documenting survey data from the Housing Assistance Supply Experiment (HASE), describes variables derived from data collected in the wave 4 household survey of Brown County, Wis., from April through August 1977. HASE monitors effects of experimental housing allowance programs operating in two midwestern housing markets by regularly surveying a marketwide sample of about 2,000 residential properties in each site. Owners and occupants of these properties are interviewed annually; observable characteristics of residential buildings and their environs are recorded at less frequent intervals. The household survey of Brown County provides data on household composition and social background; tenure, characteristics, and condition of housing units; tenant perceptions of tenant - landlord relationships; perceptions of neighborhood and social participation; housing expenses; mobility and housing history; occupational history and income; and knowledge of allowance programs. The codebook augments other survey documents by delineating a set of variables that were derived from original survey variables. Derived variables include recodes, aggregations, and other transformations of original responses. The process of building derived variables and the organization and use of the codebook are explained. Survey audit codes and a debt algorithm are appended, and an index of variables is included.

PB81-139214 PC **A03**/MF **A01**
National Inst. for Advanced Studies, Washington, DC.
Insurance Coverage and Payment Policies. Rapid Turnaround Neighborhood Preservation Research. Task Number 3.
Final rept.,
Ted R. Miller, and Jeffrey Rappaport. 30 May 79, 38p HUD-0001490
Contract HUD-H-2984
Prepared in cooperation with Granville Corp., Washington, DC.

This study examined the claim that suburban residents are able to obtain insurance reimbursement for the replacement value of a residence destroyed by fire, while residents of older neighborhoods, are generally reimbursed for a lesser amount. The study was largely restricted to the District of Columbia and 26 states planning to provide Fair Access to Insurance Requirements (FAIR Plans). The five subject areas studied included: (1) variations across States in the basis for coverage and payment policies; (2) variations between suburbs and central cities or among neighborhoods; (3) differences between insurance companies; (4) differences between insurance from conventional sources and from the FAIR Plans; and (5) entities that have the jurisdiction and responsibility to eliminate differential practices, with particular emphasis on appropriate Federal actions. Results showed that the basis for coverage and payment policies varies across States and by geographic area. As a result, newer structures in inner cities may not receive the same replacement cost coverage as suburban structures. Within the limits set by State law, companies set their own policies on what kinds of coverage to write in different areas and on how to determine actual cash value. Except in Indiana, FAIR plan policies are not written at replacement cost. Only Massachusetts, Rhode Island, and Wisconsin offer actual cash value homeowners' insurance through the FAIR plan. State legislatures, State insurance commissioners, and the insurance companies are the only entities with responsibility for eliminating differential practices, many of which increased in response to growing arson problems. HUD should promote affirmative insurance demonstration projects and convene a forum for resolving cities' insurance problems. In many States, insurance companies will not agree to further Federally imposed requirements. Tables, footnotes, and a proposed outline for a forum on urban insurance issues are included.

PB81-139255 PC **A13**/MF **A01**
RAND Corp., Santa Monica, CA.
Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
Evelyn C. Casper, and Roberta Allen. May 80, 300p RAND/N-1378-HUD, HUD-0001533
Contract HUD-H-1789

This codebook describes a set of variables derived from data collected in the second survey of tenants and homeowners conducted in St. Joseph County, Ind., as part of the Housing Assistance Supply Experiment (HASE). The survey was administered from January through July 1976. Survey data were gathered through interviews with housing unit residents. The survey gathered data on household composition, tenure, tenant perceptions of tenant - landlord relationships, housing expenses, mobility and housing history, occupational history and income, knowledge of the allowance program, and other factors. This codebook, one of a series, is intended as a basic reference for the use of the data file. It enables users to interpret the responses and plan tabulations or other analyses. Also, it documents a set of variables derived from the original survey variables. The derived variables consist of (1) recodes, aggregations, and other transformations of the original responses; (2) data collected in a related survey or found in another data base relating to the same housing unit or respondent; and (3) sample selection indicator. For each derived variable, the codebook discusses the construction, specifies all permissible responses, and provides a tabulation of the unweighted responses recorded in the final master file of survey records. Footnotes, a glossary, an index of variables, and appendices presenting survey audit codes and debt algorithm are included.

PB81-139263 PC **A13**/MF **A01**
RAND Corp., Santa Monica, CA.
Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
Patricia Boren, and Kenneth Wong. May 80, 278p RAND/N-1386-HUD, HUD-0001534
Contract HUD-H-1789

This codebook describes a set of variables derived from data collected in the second survey of landlords conducted in St. Joseph County, Ind., as part of the Housing Assistance Supply Experiment (HASE). Survey data were gathered through interviews with owners of rental properties or their representatives on characteristics of the owner, owner's perceptions of the neighborhood housing market, owner's management policies, mortgage financing, owner's income and expenses, owner's attitude toward the allowance program, and other factors. The derived variables consist of (1) recodes, aggregations, and other transformations of the original responses; (2) data collected in a related survey or found in another data base relating to the same housing unit or respondent; and (3) sample selection indicator. For each derived variable, the codebook discusses the construction, specifies all permissible responses, and provides a tabulation of the unweighted responses recorded in the final master file of survey records. Extensive tables, footnotes, a glossary, an index of variables, and appendices presenting survey audit codes, a debt algorithm, and a tenant utility algorithm are included.

PB81-139313 PC **A04**/MF **A01**
Association for the Study of Man-Environment Relations, Inc., Arlington, VA.
Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment,
D. M. Murtha, and Deana D. Rhodeside. 28 Nov 78, 65p HUD-0001547

This report analyzes the needs, prospects, and possibilities for the establishment of a neighborhood research design program within HUD. Information for the study was derived from consultations with HUD representatives, from reference materials and through personal experiences. Beginning with a discussion of HUD's legal and social mandate to improve the urban environment, the report explores the impact of the neighborhood and its physical characteristics on the quality of life. The term neighborhood design is defined as conscious efforts which are used to positively influence the neighborhood's physical environment. The study concludes that HUD would be justified in initiating a neighborhood design research program. Possible topics for research are suggested according to the following orientations: general research studies, specific studies of human - environment interaction, and projects which concern the application of research to the neighborhood design process. Examples of subject areas are the neighborhood in the urban setting, neighborhood support for the physical needs of individuals and groups, psychological implications of the physical environment, and design policy and regulation. The study recommends the neighborhood design program as an alternative approach to urban problems. Footnotes are included.

PB81-139321 PC **A03**/MF **A01**
Association for the Study of Man-Environment Relations, Inc., Arlington, VA.
Workshop on Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment. Workshop Framework and Paper Subjects,
D. Michael Murtha, and Deana D. Rhodeside. 28 Nov 78, 48p HUD-0001548

This paper contains a detailed plan for a projected workshop on policy and program development for improving the quality of the neighborhood physical environment. The workshop is intended to support the efforts of the Neighborhood Design Research Program within the Community Conservation Research Division of the Office of Research, Policy Development and Research Branch of HUD. The workshop would provide an opportunity for members of the relevant research disciplines to contribute to program planning as well as providing a forum for members of the potential client groups, urban planners, designers, developers, local government officials, and neighborhood representatives to meet and discuss their goals and requirements. These efforts are based upon the idea that the neighborhood physical environment can be a major factor in the successful functioning of the

neighborhood community as a whole. However, the most appropriate areas for specific research concerning the relations and interactions between neighborhood residents and the physical environment must be defined, and identified research and demonstration activities can lead to improvements in the application of research knowledge. The working meeting will consist of a set of background papers commissioned for the workshop, special events, and opportunities for structured and unstructured interaction between the approximatley 60 invited participants. Proposed participants are listed according to their area of expertise. A workshop agenda is included, and descriptions are given of the various facilities at the proposed workshop location. Workshop paper subjects include the neighborhood in the urban setting, evolution of the neighborhood environment, human physical implications of the neighborhood environment, psychological implications, social - political implications of the neighborhood physical environment, and economic and environmental implications. Other topics are listed in the general category of design policy and methods for neighborhood physical environment improvement.

PB81-139396 PC **A07**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
Patricia Boren. Jun 80, 144p RAND/N-1355-HUD, HUD-0001606
Contract HUD-H-1789

As part of the Housing Assistance Supply Experiment (HASE), the second (wave 2) survey of residential buildings was conducted in St. Joseph County, Ind. (site II of the experiment), from August through September 1976. For each question in the survey instrument, the codebook reproduces the exact text, specifies all permissible responses, and provides a tabulation of the unweighted responses recorded in the preliminary master file of 28 survey records. Where applicable, individual questions are annotated with instructions to the survey staff that affect the interpretation of responses. Accounting variables are also included. Footnotes are given, and a glossary, audit codes, and an information sheet are appended. (Author abstract modified).

PB81-139404 PC **A06**/MF **A01**
RAND Corp., Santa Monica, CA.
Supplemental Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
Patricia Boren. Jun 80, 122p RAND/N-1393-HUD, HUD-0001630
Contract HUD-H-1789

As part of the Housing Assistance Supply Experiment (HASE), the second (wave 2) survey of residential buildings was conducted in St. Joseph County, Ind. (site II of HASE), in August and September 1976. This codebook describes a set of variables derived from the original survey variables. Derived variables consist of recodes, aggregations, and other transformations of original responses. For each derived variable, the codebook details the construction, specifies all permissible responses, and provides a tabulation of the unweighted responses recorded in the final master file. This file contains only 28 records, since the wave 2 sample was only designed to supplement data gathered at baseline. The codebook will enable users to interpret the data and help them plan tabulations or other analyses. Footnotes, a glossary, and an index of variables are included. Audit codes are appended. (Author abstract modified).

PB81-139412 PC **A05**/MF **A01**
RAND Corp., Santa Monica, CA.
Analyzing Allowance Program Administrative Costs: Account Structures and Methodology,
G. Thomas Kingsley, and Priscilla M. Schlegel. Dec 79, 94p RAND/N-1276-HUD, HUD-0001632
Contract HUD-H-1789

This note describes the data base and methodology used in analyzing housing allowance program administrative costs in HUD's Housing Assistance Supply Experiment (HASE). Cost and workload data were provided by the housing allowance offices (HAOs) of Brown County, Wis., and St. Joseph County, Ind. The account structures, allocating costs to functions, and relating costs to workload are detailed. The HAOs maintain administrative cost data in three separate but interrelated account structures: (1) object - class accounts that group expenditures by the types of goods and services purchased as inputs to HAO operations; (2) cost center accounts that group expenditures according to the allocation of responsibility within the HAOs; and (3) function accounts that group expenditures according to the outputs they support. In HAO administration analysis, allocating cost data by function is important because it provides the basis for determining productivity. Direct expenditures cover program operation, while indirect expenditures entail administrative support. Three factors have been important in securing HAO management support of these systems: (1) data collection and analysis tasks are not overly burdensome; (2) the measures have credibility within the HAOs; and (3) lower level managers experience more benefits than costs in continued systems maintenance. Tables and footnotes are provided. Accounting data and procedures are appended.

PB81-139420 PC **A04**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
Patricia Boren, and Christina Witsberger. Jul 80, 68p RAND/N-1366-HUD, HUD-0001635
Contract HUD-H-1789

This codebook is one of a series documenting survey materials used in the Housing Assistance Supply Experiment (HASE). It describes the data on community attitudes collected in the third (wave 3) survey of landlords conducted in St. Joseph County, Ind., from April through August 1977. For each question in the 'attitude module' of the survey instrument, this codebook reproduces the exact text, specifies all permissible responses, and provides a tabulation of the unweighted responses. This codebook is a basic reference document, enabling users of the data to interpret the responses to all landlord attitude questions and to plan tabulations or other analyses. The 'attitude module' gathered data about landlords' awareness and evaluation of the housing allowance program. Respondents were asked whether they had heard of the program, what they had heard, how they evaluated it, and why. They were also asked what effects they thought the program had had on their properties and neighborhoods. The opinions of landlords are important because of the critical role they play as suppliers of housing services. Although the interview was conducted with the landlord, the sampling element was the property; i.e. the attitude module was administered only once, and duplicated thereafter, if the same person owned more than one sample property. Unlike other parts of the landlord survey, the attitude module was designed with many open - ended questions requiring that the respondents' answers be recorded verbatim. Data preparation following fieldwork involved coding the open - ended responses and converting them to machine - readable form. Auditors assessed the data quality by testing for cleaning (response applicability, plausibility, and correctness), for coding errors, and for potential biases due to nonresponse. The total of records in the data base thus processed is 1,396, one for each HASE sample property that was rental for all or part of calendar year 1976. Audit codes are included in the codebook, showing the incidence of nonresponse, highlighting extreme values, and providing cumulative distributions of response values, information which heightens the data usefulness for planning further detailed analyses. Tabular data comprise the bulk of the codebook.

PB81-139438 PC **A13**/MF **A01**
RAND Corp., Santa Monica, CA.
Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
Roberta Allen, and Evelyn Casper. Jul 80, 297p RAND/N-1379-HUD, HUD-0001637
Contract HUD-H-1789

This codebook is one of a series documenting survey data from the Housing Assistance Supply Experiment (HASE). It describes a set of variables derived from data collected in the third (wave 3) household survey of tenants and homeowners conducted in St. Joseph County, Ind., from January to July 1976. For each derived variable, the codebook details the construction, specifies all permissible values, and provides frequencies of the unweighted values in the final master file of the survey records. The third household survey was addressed to the housing units in the HASE sample and the comparability panelo(between Supply Experiment and Demand Experiment) of urban renter households. The responses to the third survey obtained from extensive interviews with the residents (tenants, homeowners, mobile home residents, and lodgers) of housing units and are documented in other codebooks of this series. This codebook augments that information by documenting a set of derived variables, consisting of recodes, aggregations, and other transformations of original responses as well as of data collected in related surveys and data bases on the same property, dwelling or respondent, and sample - selection indicators. The standard format consists of (1) a variable's descriptive label, prose definition, and a number identification from the survey file; (2) a description of the population for which the variable was built; (3) the input variables used to construct the variable; (4) the temporary variables built within the construction or copied from other files; (5) the construction process including a verbal description of how the variable was built, complete with the programming language. With each variable description, a table of marginals is also included, showing the incidence of nonresponse for each derived variable, highlighting any extreme values, and providing cumulative distributions of response values.

PB81-139446 PC **A03**/MF **A01**
Department of Housing and Urban Development, Washington, DC. Div. of Policy Development.
Housing Needs of the Rural Elderly and Handicapped.
Jul 80, 39p HUD-0001653

This report analyzes the housing needs of the rural elderly and handicapped and examines alternative approaches for meeting those needs. The report was prepared in response to a Congressional directive in Public Law 96-153, Section 306(e), which requires HUD to transmit to Congress the following: (1) an assessment of the operation of present programs in rural areas available to the elderly and the handicapped; (2) an assessment of the housing needs of the elderly and handicapped living in rural areas; and (3) an examination of the various alternatives to meeting the housing needs of the elderly and handicapped in rural areas. Functional definitions of terms (rural, elderly, and handicapped) used in the report are provided. A profile of housing characteristics shows that among all rural elderly households, 12.3 percent occupy housing which contains deficiencies identified by HUD in its Annual Housing Survey. For rural elderly renters, the deficiency rate is significantly higher than it is for owners (nearly 25 percent of the 1.3 million rural units). For the rural elderly the housing deficiency rate is nearly twice as high as it is for the nonrural elderly. The deficiency rate for the non - elderly rural disabled is virtually the same as the rate for the non - elderly rural people who are able - bodied. An overview of the housing assistance system focuses on the HUD and Farmers Home Administration programs of direct assistance rather than on unsubsidized mortgage insurance and loan guarantee programs. Attitudinal factors, support services, institutional constraints, local sponsorship, and local government capacity are among issues considered in the delivery of assistance. Alternative approaches included financing mechanisms, sponsorship arrangements, and alternative housing types. Tables, footnotes, and about 35 references are provided.

PB81-139453 PC **A09**/MF **A01**
Department of Housing and Urban Development, Washington, DC. Office of Economic Affairs.
Housing Our Families,
Cecile Smull. Aug 80, 194p HUD-0001672

This book summarizes the results of a HUD study of the special housing situation of families with children and notes several revolutionary changes that have occurred over the past few dec-

ades. These include the estimate that 45 percent of all children born in 1978 will be members of one - parent households; the fact that the dual - earner family has become the norm; and that since 1970, the number of housholds made up of husband, wife, and children has dropped 3.6 percent. The study found that most Americans were remarkably well - housed, and that less than 10 percent of the Nation's dwelling unites had physical defects in 1976. Further, fully 80 percent of all American households could obtain unflawed, uncrowded housing by spending no more than 25 percent of their income. Chances of living in good housing are poor however, when the family is black, Hispanic, or headed by a woman. The study also discusses the demand for housing, the housing market, exclusionary policies affecting families with children, and the legal status of these policies. HUD programs that serve families are assessed and policy and research options for the future are delineated. Tables, drawings, and footnotes are provided. Appendices list flaws used to measure housing adequacy, adequacy of housing by family status in 1977, and a review of HUD programs. A bibliography of approximately 90 citations is given.

PB81-139461 PC **A06**/MF **A01**
RAND Corp., Santa Monica, CA.
Codebook for the Attitude Module of the Household Survey, Site II, Wave 4. Housing Assistance Supply Experiment,
Patricia Boren. Aug 80, 116p RAND/N-1372-HUD, HUD-0001685
Contract HUD-H-1789

This codebook is one of a series documenting survey materials used in the Housing Assistance Supply Experiment (HASE). It describes the data on community attitudes collected in the final (wave 4) household survey of tenants and homeowners conducted in St. Joseph County, Ind. For each question in the 'attitude module' of the survey instrument, this codebook reproduces the exact text, specifies all permissible responses, and provides a tabulation of the unweighted responses. This codebook is a basic reference document, enabling users of the data to interpret the responses to all attitude questions, and to plan tabulations or other analyses. The attitude module gathered data about community awareness and evaluation of the housing allowance program from both the general public and program clients in the sample, consisting of owners and occupants of approximately 2,000 residential properties. Each respondent was asked whether he had heard of the program, what he had heard, how he evaluated it, and why. He was also asked what effects he thought the program had had on his own household, neighborhood, and county as a whole. Program clients were asked a set of questions about enrollment and housing evaluation procedures. In order to analyze how characteristics of individuals, such as education, affected program perceptions, the surveyors submitted the attitude module to only one member of a household. Moreover, unlike other parts of the household survey, the attitude module was designed with many open - ended questions requiring that the respondents' answers be recorded verbatim. Data preparation following fieldwork involved coding the open - ended responses and converting them to machine - readable form. Auditors assessed the data quality by testing for cleaning (response applicability, plausibility, and correctness), for coding errors, and for potential biases due to nonresponse and unequal sex distribution. The total of records in the data base thus processed is 3,691, one for each housing unit on the HASE panel. Audit codes are included in the codebook, showing the incidence of nonresponse, highlighting any extreme values, and providing cumulative distributions of response values. Such information heightens the data usefulness for planning further detailed analyses. Tabular data comprises the bulk of the codebook.

PB81-801573 PC **N01**/MF **N01**
National Technical Information Service, Springfield, VA.
The Elderly: Social, Health, and Transportation Problems and Services. 1978-August, 1979 (Citations from the NTIS Data Base).
Rept. for 1978-Aug 79,
Mary E. Young. Jan 81, 212p
See also 1964-July, 1976, NTIS/PS-77/0672 and August, 1976-1977, NTIS/PS-79/1011, and September 1979-December 1980, PB81-801581.

The characteristics and problems of the population aged 60 or older are explored in the reports cited. Demographic information, personal emotional experiences, decline of physical health, changes in economic status, and changing personal relationships are discussed and evaluated in the social context. Services for alleviation of the problems are proposed, developed, and assessed in the areas of need. (This updated bibliography contains 205 citations, none of which are new entries to the previous edition.)

PB81-801581 PC **N01**/MF **N01**
National Technical Information Service, Springfield, VA.
The Elderly: Social, Health, and Transportation Problems and Services. September, 1979-December, 1980 (Citations from the NTIS Data Base).
Rept. for Sep 79-Dec 80,
Mary E. Young. Jan 81, 234p
Supersedes NTIS/PS-79/1012, and NTIS/PS-78/0888. See also 1964-July, 1976, NTIS/PS-77/0672, August 1976-1977, NTIS/PS-79/1011, 1978-August 1979, PB81-801573.

The characteristics and problems of the population aged 60 or older are explored in the reports cited. Demographic information, personal emotional experiences, decline of physical health, changes in economic status, and changing personal relationships are discussed and evaluated in the social context. Services for alleviation of the problems are proposed, developed, and assessed in the areas of need. (This updated bibliography contains 277 citations, all of which are new entries to the previous edition.)

6. BIOLOGICAL AND MEDICAL SCIENCES

6A. Biochemistry

AD-A092 460/5 PC **A05**/MF **A01**
Hahnemann Medical Coll. and Hospital, Philadelphia, PA. Dept. of Biological Chemistry.
Chemical and Biochemical Studies of PGBX.
Annual rept. no. 2,
Thomas M. Devlin. 30 Aug 80, 90p
Contract N00014-77-C-0340

Over one hundred different samples were tested for their ability to protect isolated rat liver mitochondria from the loss of oxidative phosphorylation; samples were tested at several concentrations and with several different mitochondrial preparations. Results were reported to individuals submitting samples. A comprehensive study of the binding of Ca(++) by PGB sub x and serum albumin by PGB sub x has been completed. The results demonstrate that PGB sub x binds high affinity sites on serum albumin in an area identical to or overlapping Ca(++) binding sites. Physical chemical studies on the binding of Ca(++) by PGB sub x in an aqueous system indicates that a similar interaction occurs in the ionophoretic activity of PGB sub x in the lipid membrane. In very preliminary studies with an isolated perfused heart system, PGB sub x apparently protects the heart during periods of anoxia permitting the heart to resume its function when O2 is administered.

BNL-28363 PC **A03**/MF **A01**
Brookhaven National Lab., Upton, NY.
Function and Mechanism of Cyclic Electron Transport.
G. Hind, D. Crowther, Y. Shahak, and R. E. Slovacek. 31p CONF-800963-5
Contract AC02-76CH00016
International photosynthesis congress, Kassandra-Halkidiki, Greece, 7 Sep 1980.

In isolated intact chloroplasts from spinach, maximal rates of photosynthetic O sub 2 evolution (in saturating HCO sub 3-) are associated with a critical transthylakoid pH gradient of about 3.9 units. O sub 2 evolution is inhibited by higher delta pH values that arise when catalase is omitted from the medium; NH sub 4 Cl and actimycin, but not the energy transfer inhibitor quercetin, decrease delta pH and relieve this inhibition. The same low amount NH sub 4 Cl added to control chloroplasts (delta pH=3.9) has little effect on delta pH or the O sub 2 evolution rate. This resistance to uncoupling is due to an increase in the pumping of protons by cyclic electron flow. It suggests operation of feedback control in maintaining an optimal ATP/NADPH ratio. A general mechanism is proposed that allows the chloroplast to divert electrons from ferredoxin:NADP exp + reductase into the cyclic pathway to provide a delta pH appropriate to the ATP/NADPH ratio needed in the stroma. The stromal NADPH/NADP exp + ratio is probably sensed indirectly by membrane components with redox mid point potentials around - 50 mV, such that reduction of these components causes partial loss of linear electron flow and commencement of cyclic turnover. (ERA citation 06:001373)

BNL-28423 PC **A02**/MF **A01**
Corning Glass Works, NY.
Energetic Control of Intact Chloroplast Photosynthesis.
R. E. Slovacek, and G. Hind. 7p CONF-800963-6
Contract AC02-76CH00016
International photosynthesis congress, Kassandra-Halkidiki, Greece, 7 Sep 1980.

The induction phase of photosynthesis was studied in intact chloroplasts isolated from spinach. Within 15 sec of illumination, stromal ADP is phosphorylated to give an ATP/ADP ratio of 1.4. A transthylakoid pH gradient of about 4.1 units developed during the first min, and was associated with a low note of linear electron flow from H sub 2 O to NADP exp + . In the following 2 to 3 min, both the pH gradient and ATP/ADP ratio declined to new steady state levels (3.9 pH units and a ratio of 0.9), whereas O sub 2 evolution rose rapidly to 110 mu mol/mg chlorophyll-h. Prolonging the induction phase by omission of catalase or by addition of 2 mM phosphate resulted in a high pH gradient and ATP/ADP ratio. Ribose 5-phosphate is known to reverse partial inhibition resulting from catalase omission or high phosphate, hence its effect on the pH gradient and ATP/ADP ratio was investigated. Ribose 5-phosphate was found to lower both these parameters under conditions chosen to restrict turnover of the carbon cycle. This result with ribose 5-phosphate underscores the importance of its product, ribulose 5-phosphate and the carboxylation product, 3-phosphoglycerate, in serving as sinks for ATP and thereby preventing inhibition of electron flow by an excessive pH gradient. (ERA citation 06:001374)

CONF-8010108-3 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
M. C. MacLeod, A. Kootstra, T. J. Slaga, and J. K. Selkirk. 1980, 14p
Contract W-7405-ENG-26
International symposium on polynuclear aromatic hydrocarbons, Columbus, OH, USA, 28 Oct 1980.

It is well known that polynuclear aromatic hydrocarbons (PAH) are metabolized by mammalian cells to derivatives which covalently modify cellular macromolecules. Much effort has been devoted to defining the molecular structure of the major adducts formed with DNA in cells treated with benzo(a)pyrene (B(a)P). However, despite elucidation of the major pathways involved it has not been possible to unequivocally link the formation of specific adducts with the steps leading to malignant tranaformation. During the metabolism of B(a)P by hamster embryo cells (HECs), over 70% of the binding to nuclear macromolecules involves protein. Since nuclear proteins are known to play important roles in the structure of chromatin and are thought to be involved in the regulation of gene ex-

pression, the modification of these proteins by the introduction of PAH-adducts might reasonably be expected to perturb the structure and function of chromatin. Such perturbations could be involved in the processes which cause malignant transformation. Therefore, it seemed important to us to begin to define the pathways leading to protein-PAH binding in HECs treated with B(a)P. (ERA citation 06:001408)

PB81-126591 PC **A02**/MF **A01**
Florida State Univ., Tallahassee. Dept. of Biological Science.
Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
Journal article,
D. C. White, R. J. Bobbie, J. S. Nickels, S. D. Fazio, and W. M. Davis. 1 Oct 79, 15p EPA-600/J-80-084
Grants EPA-R-080614-30-10, NOAA-04-7-158-4406
Pub. in Botanica Marina, v23 p239-250 1980. Sponsored in part by Grant NSF-OCE78-21174.

Assay of lipid and cell wall components can readily provide differentiation in reciprocal mixtures of bacteria and fungal monocultures. To test natural microbial assemblies, small plastic sheets were exposed in a subtropical estuary. The sheets were then transferred to a laboratory where estuarine environments that inhibit prokaryotic growth and stimulated fungal growth were compared with and environment where eukaryotic growth was inhibited and prokaryotic growth was stimulated. The morphology determined by scanning electron microscopy showed typical mycelial networks where eukaryotic growth was stimulated and none were inhibited. The stimulation of eukaryotic growth produced a greater biomass measured in terms of lipid phosphate, respiratory activity or extractable adenosine nucleotides, but with a slower synthesis of phospholipids and DNA and a smaller concentration of muramaic acid (a unique prokaryote wall component). The stimulation of eukaryotic growth increased the rate of sulpholipid synthesis relative to DNA or phospholipid synthesis.

6B. Bioengineering

PB81-855496 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Biotelemetry. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 74-May 80,
William V. Sassi. Aug 80, 148p
NERACIAANT0771
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss the techniques and instrumentation used in biotelemetry. A description of the application of this methodology to such areas as the measurement of respiration and metabolic rates, brain activity, and blood flow, in various mammals including man, are also discussed. (Contains 146 citations.)

6C. Biology

AD-A092 116/3 Not available NTIS
Alaska Univ., Fairbanks. Inst. of Arctic Biology.
Response to Fertilization by Various Plant Growth Forms in an Alaskan Tundra: Nutrient Accumulation and Growth,
G. R. Shaver, and F. S. Chapin, III. 30 Mar 79, 15p ARO-14169.2-L
Grant DAAG29-76-G-0296
Availability: Pub. in Ecology, v61 n3 p662-675 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 258/3 PC **A04**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Comparative Histopathology of Acanthocephalan Infections in Some Freshwater Fishes.
Master's thesis,
Douglas P. Schelhaas. Aug 80, 62p Rept no. AFIT-CI-80-42T

The objective of this study was to compare the intestinal histopathology of common suckers (Catostomus commersoni), creek chubs (Semotilus atromaculatus) and walleyes (Stizostedion vitreum) infected with acanthocephalans. Special emphasis was placed on the extent and type of host tissue response to these infections. Intestinal tissues of suckers infected with Octospinifer macilentis and Pomphorhynchus bulbocolli, creek chubs possessing Neoechinorhynchus saginatus and walleyes parasitized by N. cylindratus were excised and fixed in 5% formalin or Bouin's solution. Comparative tissue samples were also taken from uninfected fishes. All tissues were embedded in paraplast and sectioned with a rotary microtome. Sections fixed with Bouin's solution were stained with Malloy's triple connective tissue stain, while those preserved in formalin were stained with Delafield's hematoxylin and eosin Y. The acanthocephalan infections produced no apparent detriment to the general health of these fishes. However, tissue sections revealed varying amounts of damage and tissue reaction to the parasites. These differences are attributable to the following reasons: deapth of attachment of the worm is the primary cause for variations in host tissue reactions; the morphology and depth of mucosal folding determines where and how deeply the worm must attach in order to become firmly anchored; and the relative thickness of the lamina propria and tunica muscularis influences the amount of damage resulting from worm attachment. A comparison of O. macilentis and P. bulbocolli infections in suckers showed that the difference in damage and host response is primarily due to the vast differences between the lengths of their presomas. (Author)

AD-A092 328/4 PC **A02**/MF **A01**
Naval Medical Research Unit No. 3, FPO New York 09527.
Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
Technical rept.,
Harry Hoogstraal, Carleton M. Clifford, James E. Keirans, and Hilda Y. Wassef. 1979, 13p Rept nos. NAMRU-3-TR-24/80, NAMRU-3-1200
Pub. in Recent Advanced in Acarology, v2 p269-278 1979.

No abstract available.

AD-A092 462/1 PC **A02**/MF **A01**
Naval Medical Research Unit No. 3, FPO New York 09527.
The Subgenius Persicargas (Ixodoidea: Argasidae: Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
Technical rept.,
Galila M. Khalil. 12 Oct 79, 10p Rept nos. NAMRU-3-TR-19/80, NAMRU-3-ACC-1194
Pub. in Jnl. of Medical Entomology, v16 n3 p200-206, 12 Oct 79.

No abstract available.

ANL/EES-TM-101 PC **A07**/MF **A01**
Argonne National Lab., IL.
Threatened and Endangered Fish and Wildlife of the Midwest.
D. W. Schafer, and K. E. Robeck. Jun 80, 133p
Contract W-31-109-ENG-38

This report contains information of federally-listed endangered and/or threatened fish and wildlife occurring in the midwestern states of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin. The information was compiled as a support document for the Regional Issue Identification and Assessment (RIIA) project sponsored by the Regional Assessments Division of the Office of Technology Impacts within the Department of Energy. The information on midwestern endangered species distribution, habitats, and reasons for population decline included in this document are designed to help assess the potential for adverse impacts if energy activities are sited within the general range of an endangered species. It is hoped that this document will thereby enhance the reliability of one portion of energy-related assessments performed in the Midwest. This report considers only those species listed prior to October 1979 as endangered and/or threatened in the federal endangered species list published in the Federal Register and that have been known to occur in the region in the last 20 years. (ERA citation 06:001330)

COO-4159-6 PC **A02**/MF **A01**
Sloan-Kettering Inst. for Cancer Research, New York.
Genetic and Developmental Study of a Complex Locus in the House Mouse. Progress Report, 1979-1980.
D. Bennett. 1980, 5p
Contract AS02-77EV04159

More than 50 T/t-complex and other mouse chromosome variants have been maintained for genetic study, and for distribution to other investigators. Deletion mapping has been used to analyze a lethal t-haplotype, t/sup w73/, and has shown that the t/sup w73/ chromosome carries an additional parasitic lethal factor separate and different from the t-lethal factor. In other mapping experiments it was shown that the dominant mutation Kb (knobbly) is allelic to the previously described mutation Ki, although their embryonic lethal effects are different. Experiments to extract and analyze t-haplotypes from wild populations and to determine their H-2 types, as well as to characterize viable t-haplotypes produced by existing t-lethals have been continued. (ERA citation 06:001378)

DOE/EV/01300-45 PC **A02**/MF **A01**
Wisconsin Univ.-Madison.
Organization of the R Chromosome Region in Maize. Triennial Report.
J. L. Kermicle. Dec 79, 10p
Contract AS02-76EV01300

Anthocyanin pigmentation in maize is strain and tissue specific. The primary source of variation is represented in maize races indigenous to widely separated geographic regions of North and South America. Secondary sources include variants which have appeared spontaneously in culture, arose following mutagenic treatment, or were incited through paramutation or by means of controlling elements. Much of the observed variation is attributable to a narrowly restricted segment of chromosome 10, designated the R region. The studies on R organization seek to analyze this variation in terms of the number, kind and arrangement of the components involved. (ERA citation 06:001379)

PB81-120693
(Order as PB81-120677, PC **A03**/MF **A01**)
American Samoa Office of Marine Resources, Pago Pago.
The Efficiency of Mollies, 'Poecilia mexicana', as Live Bait for Pole-and-Line Skipjack Fishing: Fishing Trials in the Tropical Central Pacific,
Patrick G. Bryan. Jun 80, 11p NOAA-80101509-2
Included in Marine Fisheries Review, v42 n6 p15-24 Jun 80.

Cultured mollies, Poecilia mexicana, were tested as live bait for pole-and-line skipjack tuna, Katsuwonus pelamis, fishing. Fishing trials were conducted in American Samoa, Tuvalu, and the Gilbert Islands in June and July 1978. Mollies performed as well as or better than wild bait.

PB81-120743
(Order as PB81-120735, PC **A03**/MF **A01**)
Biologische Anstalt Helgoland (Germany, F.R.)
Implications of Transplantations to Aquaculture and Ecosystems,
H. Rosenthal. May 80, 15p NOAA-80101510-1
Included in Marine Fisheries Review, v42 n5 p1-14 May 80.

Increasing aquaculture activities occur primarily in areas where support and supply for the developing industry are available, e.g., close to main shipping routes and harbors. Because intensive aquaculture operations often provide ideal conditions for

initial establishment of exotic species, the chances for transfer of nonindigenous species increase. Diseases have spread rapidly through multiple transfer of major candidate species for aquaculture. An overview is given of important deleterious side effects accompanying transplantation of aquatic organisms.

PB81-120750
(Order as PB81-120735, PC **A03**/MF **A01**)
National Marine Fisheries Service, Seattle, WA. Northwest and Alaska Fisheries Center.
The Snail Resource of the Eastern Bering Sea and Its Fishery,
Richard A. MacIntosh. May 80, 6p NOAA-80101510-2
Included in Marine Fisheries Review, v42 n5 p15-20 May 80.

A trawl survey in the eastern Bering Sea outlined the distribution and relative abundance of several large snails of commercial importance. Snails made up 6.6 percent of the invertebrate biomass with members members of the genus Neptunea being most abundant.

PB81-120768
(Order as PB81-120735, PC **A03**/MF **A01**)
South Carolina Wildlife and Marine Resources Dept., Charleston. Marine Resources Center.
Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
H. Powles, and C. A. Barans. May 80, 15p NOAA-80101510-3
Contract NOAA-6-35147
Included in Marine Fisheries Review, v42 n5 p21-35 May 80,

This report briefly describes the nearshore sponge-coral habitat and evaluates several methods for monitoring relative abundance of groundfish species of these nearshore habitats.

PB81-129546 PC **A02**/MF **A01**
University of Southern Mississippi, Hattiesburg.
C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
Journal article,
Paula E. Gregory, Patricia N. Howard-Peebles, Rudolph D. Ellender, and Billy J. Martin. 1980, 3p EPA-600/J-80-148, ERL.GB-0093
Grant EPA-R-804527
Pub. in Copeia, n3 p545-547 1980.

Many fish karyotypes possess a large group of morphologically similar chromosomes. The authors describe a technique developed through modification of a C-banding procedure that produces distinct bands and thus allows identification of the heterochromatic regions of individuals pairs of fish chromosomes. The technique has been applied to three established marine fish cell lines.

PB81-131765 PC **A09**/MF **A01**
Johns Hopkins Univ., Laurel, MD. Applied Physics Lab.
Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay,
Lawrence C. Kohlenstein. Feb 80, 189p PPSP/JHU/PPSE-T-14

This is a study of mortality and migration processes that influence the population structure and harvest of adult striped bass spawned in the Maryland tributaries of the Chesapeake Bay and an examination of the influence of stock size on the reproductive success of the population. A model of the adult stock was developed that incorporates the age and sex specific nature of Striped Bass migratory patterns and mortality rates. The model was used to address a number of resource management issues including estimating the effects of a 14 inch minimum size limit in Maryland and the consequences of a reduction in year class strength through power plant operations.

PB81-801623 PC **N01**/MF **N01**
National Technical Information Service, Springfield, VA.
Fishways: Design and Operation. 1964-November, 1980 (Citations from the NTIS Data Base).
Rept. for 1964-Nov 80,
Robena J. Brown. Dec 80, 91p
Supersedes PB80-801442, and NTIS/PS-78/1229.

Studies describing models and construction of fishways are cited in the bibliography. Protectors, guidance devices, habitat improvement, and maintenance are included, as well as fishways and fish ladders for streams, lakes, dams, and rivers. (This updated bibliography contains 84 citations, 3 of which are new entries to the previous edition.)

6D. Bionics

PB81-132557 PC **A12**/MF **A01**
Rhode Island Univ., Kingston.
Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
John Birk, and Robert Kelley. Apr 80, 254p NSF/RA-800223
Grant NSF-ENG79-21587

Workshop proceedings identified basic research issues and advanced scientific knowledge needed for the development of future robotic systems. The framework for identifying these basic research issues involved examining robotic systems in terms of six constituent functions: intelligence and decisionmaking; control; manipulation; locomotion; sensing systems; and communication. Papers addressed these areas of knowledge, the demands that robotic systems place on scientific disciplines, existing research approaches and directions, and research issues which require investigation. From this compendium of research problems in robotics, several conclusions were reached: (1) A large number of reasonably well-defined research problems exist; (2) A substantial knowledge base already exists with which to solve these problems; and (3) Research is needed both on many individual facets of the robotics problem and on integrated systems.

6E. Clinical Medicine

AD-A091 896/1 Not available NTIS
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
Endogenous Pyrogen Physiology,
William R. Beisel. 1980, 5p
Supersedes report dated 10 Dec 79, AD-A082 841. Tutorial Lecture presented at the Fall Meeting, 1979, New Orleans.
Availability: Pub. in Physiologist, v23 p38-42 Apr 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A091 897/9 Not available NTIS
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
Survival of Legionella pneumophila in Aerosols: Effect of Relative Humidity,
Richard F. Berendt. 1980, 1p
Supersedes report dated 13 Dec 79, AD-A079 301.
Availability: Pub. in the Jnl. of Infectious Diseases, v141 n5 p689 May 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A091 899/5 Not available NTIS
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats,
Harold A. Neufeld, Judith G. Pace, Mitchell V. Kaminski, David T. George, and Peter B. Jahrling. 25 Jul 79, 6p
Supersedes report dated 2 Jul 79, AD-A072 139.
Availability: Pub. in Endocrinology, v107 n2 p596-601 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A091 900/1 Not available NTIS
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine,
Stephen H. Leppla, Rebecca B. Dorland, and John L. Middlebrook. 23 Nov 79, 4p
Supersedes report dated 14 Nov 79, AD-A078 225.
Availability: Pub. in The Jnl. of Biological Chemistry, v255 n6 p2247-2250, 25 Mar 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A091 918/3 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
Isolation and Characterization of Minicell-Producing Mutants and Shigella spp,
P. Gemski, and D. E. Griffin. 1980, 8p
Pub. in Infection and Immunity, v30 n1 p297-302 Oct 80.

No abstract available.

AD-A091 919/1 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
Experimental Endotoxin Shock: The Pathophysiologic Function of Endorphins and Treatment with Opiate Antagonists,
Alan I. Faden, and John W. Holaday. 14 Mar 80, 12p
Pub. in the Jnl. of Infectious Diseases, v142 n2 p229-238 Aug 80.

No abstract available.

AD-A091 920/9 Not available NTIS
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation,
P. G. Canonico, J. S. Little, M. C. Powanda, K. A. Bostian, and W. R. Beisel. 1980, 5p
Availability: Pub. in Infection and Immunity, v29 n1 p114-118 Jul 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A091 921/7 Not available NTIS
Naval Biosciences Lab., Oakland, CA.
Ketoconazole in Early and Late Murine Coccidioidomycosis,
Hillel B. Levine, and James M. Cobb. 1980, 7p
Availability: Pub. in Reviews of Infectious Diseases, v2 n4 p546-550 Jul-Aug 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A091 922/5 Not available NTIS
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study,
C. T. Liu, R. P. Sanders, and J. W. Dominik. 30 Jul 79, 4p
Availability: Pub. in American Jnl. of Veterinary Research, v40 n5 p836-839 May 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 002/5 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
Immune Reactivities of Antibodies against Glycolipids,
Roberta L. Richards, and Carl R. Alving. 10 Dec 79, 14p
Pub. in ACS Symposium Series, Cell Surface Glycolipids, v27 n128 p461-473 1980.

No abstract available.

AD-A092 046/2 Not available NTIS
Defence and Civil Inst of Environmental Medicine, Downsview (Ontario).

Further Remarks on the Mechanism Producing the Symptoms of Meniere's Disease,
G. F. Dohlman. Apr 80, 7p Rept no. DCIEM-PUB-75X17
Summary in French.
Availability: Pub. in Jnl. of Otolaryngology, v9 n4 p285-290 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 085/0 PC **A02**/MF **A01**
Walter Reed Army Medical Center, Washington, DC.
Lack of Diagnostic Utility of Febrile Agglutinin Screens.
Final rept.,
Donald S. Burke, and Scott Brown. 1980, 5p
Pub. in Military Medicine, v145 n9 p624-627 Sep 80.

No abstract available.

AD-A092 087/6 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
Influence of Temperature on Complement-Dependent Immune Damage to Liposomes,
Carl R. Alving, Katherine A. Urban, and Roberta L. Richards. 26 Nov 79, 10p
Pub. in Biochimica et Biophysica Acta, v600 p117-125 1980.

No abstract available.

AD-A092 090/0 PC **A22**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 1.
22 Oct 80, 504p Rept no. FTD-ID(RS)T-0936-80-VOL-16-1
Unedited machine trans. of Opyt Sovetskoy Meditsiny v Velikoy Otechestvennoy Voyne, 1941-1945 (USSR) v16 p1-173 1954. See also Volume 16, Section 2, AD-A092 091.

No abstract available.

AD-A092 091/8 PC **A22**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 2.
22 Oct 80, 501p Rept no. FTD-ID(RS)T-0936-80-VOL-16-2
Unedited machine trans. of Opyt Sovetskoy Meditsiny v Velikoy Otechestvennoy Voyne, 1941-1945 (USSR) v16 p174-330 1954. See also Volume 16, Section 3, AD-A092 092.

No abstract available.

AD-A092 092/6 PC **A22**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 3.
22 Oct 80, 501p Rept no. FTD-ID(RS)T-0936-80-VOL-16-3
Unedited machine trans. of Opyt Sovetskoy Meditsiny v Velikoy Otechestvennoy Voyne, 1941-1945 (USSR) v16 p331-475 1954. See also Volume 16, Section 4, AD-A092 093.

No abstract available.

AD-A092 093/4 PC **A21**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 4.
22 Oct 80, 500p Rept no. FTD-ID(RS)T-0936-80-VOL-16-4
Unedited machine trans. of Opyt Sovetskoy Meditsiny v Velikoy Otechestvennoy, Voyne, 1941-1945 (USSR) v16 p476-657 1954. See also Volume 16, Section 1, AD-A092 090.

No abstract available.

AD-A092 145/2 PC **A02**/MF **A01**
Florida Univ., Gainesville. Dept. of Orthopaedics.
Assessment of Non-Invasive Methods of Measuring Bone Repair in Naval Casualty Victims.
Contract rept.,
Robert W. Bright. Feb 80, 6p
Contract N00014-77-C-0504

The major objective of this report was to compare non-invasive quantitative methods of assessing bone and bone graft incorporation and strength with established invasive methods for assessment. Our ultimate goal was to develop a clinically applicable method for evaluating the quality of bone by valid and reliable, non-invasive methods which would correlate with the structural properties of those bones in vivo.

AD-A092 160/1 PC **A02**/MF **A01**
Naval Aerospace Medical Research Lab., Pensacola, FL.
Annotated Bibliography of Reports. Supplement Number 11, 1 October 1978 - 30 September 1979.
Annual rept.,
Thomas R. Jimenez. 30 Sep 79, 16p
Supplement no. 11 to report dated 30 Jun 68, AD-674 914.

No abstract available.

AD-A092 209/6 PC **A10**/MF **A01**
Army War Coll., Carlisle Barracks, PA.
USAWC Coronary Risk and Fitness Analysis.
Study project rept.,
Donald R. Williamson. 4 Jun 80, 217p
Original contains color plates: All DTIC and NTIS reproductions will be in black and white.

This study describes the need to intensify efforts to conserve the Army's experienced personnel resources through meaningful evaluations and fitness programs for soldiers of every age, rank and job specialty. It provides a detailed discussion of the primary risk factors associated with Coronary Heart Disease Aerobic training is emphasized as one of the most effective ways to improve cardiorespiratory fitness. Information on medical evaluations and determinations of fitness levels are included. Clinical procedures and screening techniques used with voluntary participants of the AWC Class of 1980 are discussed, and then followed by the study conclusion, recommendations and comments from the participants.

AD-A092 232/8 PC **A03**/MF **A01**
Naval Dental Research Inst, Great Lakes, IL.
Summaries of Research, Fiscal Year 1980.
Rept. for 1 Oct 79-30 Sep 80.
Oct 80, 42p Rept no. NDRI-PR-80-13

The Institue has undergone some reorganization since 1967. The current organization of three major Departments is reflected on the preceeding page. The Scientific Department consists of the Microbiology, Biochemistry, Histopathology, and Veterinary Sciences Divisions. Respectively, they carry out required microbiological, serological and bacterological analysis; biochemical studies of etiological agents and of host factors involved in oral diseases; assistance, advice and preparation of specimens for histological analysis; and research in the field of laboratory animal medicine and dentistry. The Clinical Investigation Department conducts research related to prevention and treatment of dental and oral diseases with primary emphasis directed toward acute and chronic infections, problems of dento-alveolar trauma and injury, and the delivery of optimal dental care for the naval population. The Administrative Department provides the Institute with supply and fiscal services; library, general clerical services and manuscript preparation; photography and graphics; and equipment and facility maintenance, as well as special fabrications and instrumentation support.

AD-A092 252/6 PC **A04**/MF **A01**
Hadassah Medical School, Jerusalem (Israel). Environmental Health Lab.
Disinfection of Viruses in Water by Ozone.
Final rept.,
H. I. Shuval, and E. Katzenelson. Dec 79, 71p
Contract EPA-R803510-0

Previous studies by Mudd, et al., have also been made on the reaction of ozone and amino acids. However, these investigations were carried out using a continuous flow of ozone which makes it difficult to obtain accurate kinetic data. Our results differ from those of Mudd, et al., both in the order of susceptibility of the amino acids in aqueous solution to oxidation by ozone and also in time scale (minutes as against seconds, as in the present study). From the present study, the following conclusions can be drawn. Ozone reacts extremely rapidly (less than one second) with those amino acids containing sulfur groups. The S-S linkage in single amino acids reacts with ozone on a time scale similar to that of the virus, while C-S-H and C-S-C groupings are attacked even quicker. However, the interaction of ozone with the enzyme is apparently with the S-S link and not the methionine group. Further, the isolated methionine acid reacts differently from the acid in a peptide chain with ozone. Apparently the effect of the entire peptide chain causes steric hindrance as well as physical-chemical changes in the micro-environment and hence slows down the kinetics.

AD-A092 284/9 PC **A02**/MF **A01**
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
Interim rept.,
Werner Janssen, and Kenneth W. Hedlund. 7 Nov 80, 12p

A Giemsa stain technique for demonstrating L. pneumophila and Legionella-like organisms in culture or tissue impression smears and scrapings is described which is simple, rapid and effective. It is recommended for routine staining of cultures, and suggested for staining impression smears and scrapings of human lung tissue samples as a potential method for early presumptive diagnosis of Legionnaires' Disease and Pittsburgh Pneumonia. (Author)

AD-A092 286/4 PC **A02**/MF **A01**
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
Interim rept.,
Joseph A. Mangiafico, Kenneth W. Hedlund, and Allen R. Knott. 12 Nov 80, 12p

A reversed passive information test was developed to assay concentrations of soluble antigen of Legionnaires' Disease (Legionella pneumophila) in human urine samples. The test is highly sensitive, being able to detect as little as 0.0002 micrograms of antigen. Preliminary results with this test on serial urine and serum samples from a patient with confirmed legionellosis show that measurable amounts of antigen are present in urine during the course of the illness. However, no antigen could be detected in the patient's serum. (Author)

AD-A092 287/2 PC **A02**/MF **A01**
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
Interim rept.,
Kenneth W. Hedlund, and Robert Larson. 5 Nov 80, 17p

A low molecular weight protein toxin was isolated from Legionella pneumophila by acid precipitation gel filtration and isotachophoretic separation. This toxin has an in vivo lethality for AKR/J mice and appears antigenically similar to a similar toxin we have discovered in the genetically unrelated Pittsburgh Pneumonia agent. (Author)

AD-A092 329/2 PC **A02**/MF **A01**
Naval Medical Research Unit No. 3, FPO New York 09527.
A Study to Evaluate Non-Fatal Rabies in Animals.
Technical rept.,
B. A. M. Botros, J. C. Lewis, and M. Kerkor. 1979, 8p Rept nos. NAMRU-3-TR-21/80, NAMRU-3-ACC-1197
Pub. in Jnl. of Tropical Medicine and Hygiene, v82 n7 p137-141 1979.

No abstract available.

AD-A092 330/0 PC **A02**/MF **A01**
Naval Medical Research Unit No. 3, FPO New York 09527.
Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis,
Technical rept.,
Z. Farid, S. Bassily, G. I. Higashi, N. A. El-Masry, and R. H. Watten. 22 Nov 78, 4p Rept nos. NAMRU-3-TR-20/80, NAMRU-3-1195
Pub. in Annals of Tropical Medicine and Parasitology, v73 n5 p501-502 1979.

No abstract available.

AD-A092 331/8 PC **A02**/MF **A01**
Naval Medical Research Unit No. 3, FPO New York 09527.
The Mechanisms of Pathogenicity in the Tick Paralyses.
Technical rept.,
Rainer Gothe, Klaus Kunze, and Harry Hoogstraal. 1979, 16p Rept nos. NAMRU-3-TR-23/80, NAMRU-3-ACC-1199
Pub. in Jnl. of Medical Entomology, v16 n5 p357-369, 23 Nov 79.

No abstract available.

AD-A092 339/1 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility,
Michael W. Benenson, Ernest T. Takafuji, William H. Bancroft, Stanley M. Lemon, and Michael C. Callahan. 6 Dec 79, 12p
Pub. in American Jnl. of Epidemiology, v112 n4 p471-481 1980.

No abstract available.

AD-A092 343/3 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit,
Geoffrey M. Graeber, Robert J. Snyder, Russ Zajtchuk, and Walter H. Brott. 1980, 10p
Pub. in the Annals of Thoracic Surgery, v30 n4 p364-369 Oct 80. Presented at the Annual Meeting of The Society of Thoracic Surgeons (16th), 21-23 Jan 80, Atlanta, GA.

No abstract available.

AD-A092 358/1 PC **A02**/MF **A01**
Army Inst. of Dental Research, Washington, DC.
A Technique for Staining Extracted Teeth: A Research and Teaching Aid for Bleaching.
Rept. for Sep-Oct 80,
William F. Freccia, and Donald D. Peters. Oct 80, 16p

This study developed a technique for staining extracted teeth. Its possible value in research comparisons of bleaching techniques, or as an aid in teaching students bleaching techniques is discussed. (Author)

AD-A092 391/2 PC **A03**/MF **A01**
Army Inst. of Dental Research, Washington, DC.
Evaluation of a New Thermoplastic Gutta Percha Obturation Technique Using 45Ca.
Rept. for 25 Feb 80-27 Oct 80,
Michael D. Benner, Donald D. Peters, Marvin Grower, and W. E. Bernier. 27 Oct 80, 38p

This study evaluated the leakage following in vitro gutta percha obturation of 60 root canals using 3 techniques, both with and without use of sealer. The techniques were: lateral condensation; warm (vertical) condensation; and the new mechanical compaction (McSpadden) technique. Comparison of the techniques were made by evaluating horizontal sections of the teeth by radioautography after soaking the teeth in 45Ca. The difference between techniques was not statistically significant. Additionally, at only one level (1.4mm) in only one technique (compaction) did sealer show an improvement in seal at a statistical level of even $p < 0.085$. Since this cannot be considered statistically significant, factors which may have lead to the results are discussed. (Author)

AD-A092 409/2 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Application of Case-Mix Adjusted Lengths of Stay in Naval Medical Treatment Facility's Output Measurement.
Master's thesis,
David Howard Hofflinger. Sep 80, 70p

The absence of a meaningful measure of hospital output is widely recognized. Common measures such as inpatient length of stay, discharges, or Composite Work Units do not fully consider the mix of patients hospitalized and are at best rough partial indicators of output. The intent of this study is to determine whether length of stay, a common output measure, which is adjusted for case-mix, is a better partial indicator than non-adjusted length of stay. This hypothesis was tested with three analyses, using the inpatient admission/disposition records for 24 selected naval medical treatment facilities for calendar year 1978, and found to be correct. For each analysis two indices are developed to evaluate the overall change in length of stay: the first index evaluating changes due to differences in case-mix; the second index evaluating changes due to differences in length of stay for each case-mix type. (Author)

AD-A092 425/8 PC **A02**/MF **A01**
Naval Dental Research Inst, Great Lakes, IL.
Influence of Interdental Contacts on Periodontal Status.
Progress rpet.,
E. B. Hancock, C. V. Mayo, R. R. Schwab, and M. R. Wirthlin. 1980, 8p Rept no. NDRI-PR-80-14
Pub. in Jnl. of Periodontology, v51 n8 p445-449 Aug 80.

No abstract available.

AD-A092 429/0 PC **A02**/MF **A01**
School of Aerospace Medicine, Brooks AFB, TX.
Clinical Applications of Biofeedback,
Richard A. Levy. 1980, 8p Rept no. SAM-TR-80-249
Pub. in Resident and Staff Physician, 6p Sep 80.

No abstract available.

AD-A092 467/0 PC **A02**/MF **A01**
School of Aerospace Medicine, Brooks AFB, TX.
Nursing Introspection: Peer Review,
Rosa Lee Cook. 1980, 5p Rept no. SAM-TR-79-240
Pub. in Aviation, Space, and Environmental Medicine, v51 n10 p1159-1162 1980.

No abstract available.

BNL-28428 PC **A03**/MF **A01**
Brookhaven National Lab., Upton, NY.
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
R. D. Stoner, R. T. Drew, and D. M. Bernstein. 1980, 26p CONF-801039-2
Contract AC02-76CH00016
20. annual Hanford Life Sciences symposium, Richland, WA, USA, 19 Oct 1980.

The effects of inhaled benzene on primary and secondary antibody responses and the incidence of leukemia in mice are reported. Young adult mice were given 5, 12, or 22 exposures to 400 ppM benzene for 6 hrs/day 5 days/week. After the exposure periods, the mice were immunized with absorbed tetanus toxoid (APTT) and/or fluid tetanus toxid (FTT). Exposure to benzene increasingly suppressed primary antibody responses to both antigens. Secondary antibody responses to FTT were nearly normal in animals given 10, 15, or 20 exposures to 400 ppM benzene. Other groups of mice were exposed to either 200 ppM or 50 ppM benzene. Primary antibody responses elicited with FTT and/or APTT were nearly normal in all mice exposed to 50 ppM benzene and in mice exposed to 200 ppM benzene for 5 days. However, 10 and 20 exposures to 200 ppM benzene inhibited antibody production. The effects of chronically inhaled 300 ppM benzene on the time of onset and incidence of leukemia in 400 7-month-old female HRS/J mice were also studied. Two genotypes were used; the (hr/hr) hairless mice are leukemia-prone, whereas the (hr/+) haired mice are more resistant to leukemia. The exposure continued for a period of 6 months. Lymphoid, myeloid, and mixed (lymphoid and myeloid) leukemias were observed. Ninety percent of the (hr/hr) mice exposed to benzene died from leukemia as compared with 91% for the (hr/hr) air control group. Eighty-five percent of the (hr/+) mice exposed to benzene died from leukemia as compared with 81% for the (hr/+) air control group. Exposures to 300 ppM benzene did not alter the time of onset or the incidence of leukemia commonly expected in HRS/J mice. (ERA citation 06:001413)

CONF-8010108-2 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.
J. D. Jones, G. D. Griffin, C. S. Dudney, and P. J. Walsh. 1980, 10p
Contract W-7405-ENG-26
International symposium on polynuclear aromatic hydrocarbons, Columbus, OH, USA, 28 Oct 1980.

Carcinogens influence both the initation of abnormal cell phenotypes and the subsequent promotion of such cells into a tumor. Certain other agents act as stimulators of proliferation and may have only properties of promotion. Simple examples include mechanical and certain chemical wounding of tissue that results in healing. In addition, hyperplastic growth stimulated by certain chemicals may also promote cancer. Quantification of a hyperplastic condition, or of the body's attempts to heal by the replacement of cells, and a quantification of cells dying from attrition seem necessary but not totally sufficient to explain incidence and latency periods. Empirical relationships between incidence of cancer and estimated cell proliferation in excess of normal will be described. (ERA citation 06:001391)

HRP-0902233/6 PC **A05**/MF **A01**
Drexel Univ., Philadelphia, PA.
Health Planning Related to Environmental Factors. Volume II: Foodborne and Waterborne Intestinal Illnesses Module,
Charles I. Goldman, and Robert E. Laessig. Dec 78, 85p
Contract PHS-HRA-230-76-0247
Prepared in cooperation with Government Studies and Systems, Inc., Philadelphia, PA. See also Volume 1, HRP-0101801, Volume 3, HRP-0902234, Volume 4, HRP-0902236, and Volume 5, HRP-0902237.

This module addresses the health problems created by the transmission of bacterial agents found in food and water which can have pathologic effects on the intestinal systems of humans. When it is realized that a contaminating substance in the food or water may infect not only one person or several who come in direct contact with it, but may be transmitted through person-to-person contact to cause a serious outbreak of disease in the local area, the potential environmental hazard becomes obvious. This module is one of a series prepared especially for the health systems agencies (HSAs) as a guide to incorporating elements of environmental health planning in their health systems plans (HSPs) and annual implementation plans (AIPs). It identifies the means by which HSAs can evaluate the extent of foodborne and waterborne intestinal illnesses and conditions of environmental hazard in their planning areas and describes the types of actions which can be developed in their HSPs and AIPs. The chapters of the module correspond to the major steps in the planning process. The issues of health status and environmental need assessment are addressed, and quantitative indicators are identified for assembling data relative to them. Data sources for the indicators are described, and comparison data and standards are provided for HSAs to detect potential health status and environmental health system problems by analyzing differences between data for their HSAs and the comparison data. Factors to be considered in setting priorities and examples of quantified goals and objectives for foodborne and waterborne intestinal illnesses are provided, as well as

examples of long-range and short-range actions which HSAs might use in implementing their objectives for environmental planning.

HRP-0902234/4 PC **A06**/MF **A01**
Drexel Univ., Philadelphia, PA.
Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text.
Geraldine K. Stovall, Robert E. Laessig, and P. W. Purdom. Dec 78, 110p
Contract PHS-HRA-230-76-0247
Prepared in cooperation with Government Studies and Systems, Inc., Philadelphia, PA. See also Volume 1, HRP-0101801, Volume 2, HRP-0902233, Volume 4, HRP-0902236, and Volume 5, HRP-0902237.

The purpose of this module is to help the health systems agencies (HSAs) deal with adverse health effects resulting from exposure to toxic and hazardous substances cause by chemical and physical agents transmitted by air, water, and food and absorbed into the human body by inhalation, ingestion, skin absorption or puncture. Some examples of these are allergenics, asphyxiants, and carcinogens, and the four general categories of health threats used in this presentation are cancer and chronic poisonings, acute poisonings, birth defects, and respiratory and other somatic conditions. Tables are included to indicate how and where these toxic and hazardous substances may be found in the environment and their effects on health status. The module discusses example issues or areas of concern which HSAs may face concerning hazardous and toxic substances and provides quantitative indicators, data sources for HSAs, and comparative data sources which HSAs can utilize to assess their current health problems. Examples of areas of concern and quantified goals are presented for HSA consideration in the establishment of quantified goals on health status and environmental health system needs. References cited in the text of this module are listed, and an additional list of environmental health references related to hazardous and toxic substances is provided. The Second Section of this volume (HRP-0902235) contains the Appendices.

HRP-0902554/5 PC **A09**/MF **A01**
Rhode Island Dept. of Health, Providence.
Community Health Profiles 1979 Rhode Island Dept. of Health.
1979, 200p
Sponsored in part by Bureau of Health Planning, Hyattsville, MD.Portions of this document are not fully legible.

The Center for Health Statistics was established within Rhode Island Health Services Research, Inc., (SEARCH) in 1973. The primary purpose of the Center is to collect, analyze, and disseminate information on the health status of Rhode Island residents, the medical resources available in the state, and the utilization and cost of those resources. To assist in the dissemination of information from the data sets, a publication series referred to as 'Profiles from the Health Statistics Center' was established. The purpose of the series is to provide basic information for the planning, implementation, and evaluation of health programs in the state in a timely manner. Therefore, these profiles are designed as reference documents, with little or no interpretation of results attempted.

HRP-0902557/8 PC **A04**/MF **A01**
Southeastern Wisconsin Health Systems Agency, Inc., Milwaukee.
Report on Cardiac Catheterization and Open Heart Surgery Services.
1979, 58p
Sponsored in part by Bureau of Health Planning, Hyattsville, MD.

This report represents one of the mandated activities of the Southeastern Wisconsin Health Systems Agency (SEWHSA) under Public Law 93-641, which states '...each health systems agency shall have as its primary responsibility the provision of effective health planning for its health service area and the promotion of the development within the area of health services, manpower, and facilities which meet identified needs, reduce documented inefficiencies, and implement the health plans of the Agency.'

HRP-0902558/6 PC **A14**/MF **A01**
East Central Michigan Health Systems Agency, Inc., Saginaw.
Plan for the Reduction of Excess Hospital Beds in the Bay and Saginaw Subareas.
1979, 315p
Sponsored in part by Bureau of Health Planning, Hyattsville, MD.

The existence of excess hospital bed capacity contributes to increasing hospital and health care costs, frequently with little or no benefit to the health status of the population. Through the reduction of excess hospital bed capacity that is unused or over utilized, studies have shown that the cost can be eliminated. On July 25, 1978, the Governor of the State of Michigan approved Act 368 of the Public Acts of 1978 commonly known as the public Health Code. This act was designed among other things to promote the efficient and economical delivery of health services, to provide for the appropriate utilization of health care facilities and services, and to provide for the closure of hospitals or consolidation of hospitals or services. Specific requirements for the development of a program to accomplish the closure or consolidation are found in Part 221, Section 22154 of Public Act 386 Exhibit 1 (Pgs E1-E9).

HRP-0902605/5 PC **A04**/MF **A01**
Comprehensive Health Planning Council of Southeastern Michigan, Inc., Detroit.
Criteria and Standards for Radiation Therapy (Megavoltage) in Southeastern Michigan.
21 Nov 79, 60p
Sponsored in part by Bureau of Health Planning, Hyattsville, MD.

The criteria and standards presented in this document provide the basis for the review of proposals to establish, expand or alter institutionally-based radiation therapy services, the criteria developed should provide sufficient guidance to the Plan Implementation Committee of CHPC-SEM to enable it to accomplish the following: Assure the existence of sufficient treatment capacity to serve the identified radiation therapy needs of the Southeastern Michigan community; Assure the residents of Southeastern Michigan of reasonable access to radiation therapy services; Assure that the radiation therapy services offered are of good quality; Avoid unnecessary and wasteful duplication of radiation therapy equipment and services; and promote the effective operation of the health care system in Southeastern Michigan. These criteria and standards also should provide guidance to providers who may consider initiating a new radiation therapy service or altering an existing service or program.

HRP-0902632/9 PC **A05**/MF **A01**
American Dental Association, Chicago, IL.
Policies on Dental Health and Health Planning.
Aug 80, 84p

This document consists of policy and philosophy on the wide subject of community dental health programs or dental public health. Not included are those policies relating to third party programs, including Medicaid and Medicare which may be found in the publication, Policies on Dental Care Programs, available from the ADA Council on Dental Care Programs. To provide the reader with a quick reference to related issues, the following documents are appended: A Dental Health Program for the Community, State and Nation, ADA Dental Health Program for Children (only relevant excerpts included) and Guidelines for Dentistry's Position in a National Health Program.

PB81-122962 PC **A09**/MF **A01**
Connecticut Univ. Health Center, Farmington.
Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
Final rept. Apr 75-Jul 80,
Neville J. G. Doherty, and Elbert A. Powell. Jul 80, 187p NIDR/CR-80-12
Contract N01-DE-5-2449

This school-based clinical trial was designed to assess the cost and effectiveness of three caries preventive agents used singly and in combination with each other: APF gel, NaF mouthrinse, and pit and fissure sealant. The study was conducted in Springfield, MA, a non-fluoridated, industrial city. A baseline population of 1860 children, aged 11-13, was randomly assigned to a control and seven treatment groups. Treatments lasted for 3 years; one year later those remaining in the study (61%) were given a final examination. Costs included the value of all resources used in the program. Results showed no significant differences among the treatments; a significant effect for those receiving mouthrinse compared with those not receiving it, resulting in a mean DMFS reduction of .87; and a range of costs from $15.69 per subject per year for the mouthrinse treatment to $62.33 for the combined gel-rinse-sealant treatment. Direct labor accounted for 45% of all costs. The findings provide limited evidence for the efficacy of NaF mouthrinse; and indicate that the costs of preventive programs depend on the resouces used, their intensity of use, and on the compliance of the subjects.

PB81-124687 PC **A14**/MF **A01**
Abt Associates, Inc., Cambridge, MA.
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
Interim rept.,
A. James Lee, Dennis Hefner, and Ralph Hardy, Jr. Aug 80, 314p DHHS/PUB/HCFA-80/03057
Contract DHEW-HCFA-500-78-0019
Health Care Financing Grants and Contracts Report. Prepared in cooperation with Hefner Associates, Inc., and PRACON, Inc.

The Phase I Report gives the final research design for evaluating the MAC-EAC program, and reports results from the Massachusetts pilot study and the Survey of Medicaid Drug Programs. Major findings from the pilot state analysis in Massachusetts are as follows: MAC Reimbursement Limits: In the Massachusetts Medicaid program, price limits on the first five MAC products are saving at least $200,000 per year--12-14 percent of the total reimbursement cost for those products (including fee). EAC Reimbursement Limits: In Massachusetts, the state's EAC program is saving at least $1.5 million per year. Administrative Costs: The (incremental) administrative cost of implementing and operating the MAC/EAC program in Massachusetts was less than $20,000. However, part of a recent increase in the dispensing fee may also be attributed to the MAC/EAC program, adding almost half a million dollars per year to overall program costs. Overall: The Massachusetts Medicaid program is saving between $1.2 and $2.2 million annually--3.2 percent and 5.9 percent, respectively of total drug reimbursement expense.

PB81-126088 Not available NTIS
National Bureau of Standards, Washington, DC.
Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate CaHPO4.2H2O Formation,
L. C. Chow, M. K. Guo, C. C. Hseih, and Y. C. Hong. Aug 80, 6p
Pub. in Jnl. Dental Research 59, n8 p1447-1452 Aug 80.

Powdered human enamel treated for 3 minutes with an acidulated phosphate fluoride solution followed by suspension in synthetic saliva for a 72-hour period acquired a small but significant amount of apatitic fluoride. Similar treatments using 2% NaF and 8% SnF2 solutions produced no apatitic fluoride uptake. All three fluoride agents produced large amounts of apatitic fluoride when used in combination with a pretreatment with a solution saturated with CaHPO4.2H2O. The pretreatment enhanced the apatitic F formation by producing some CaHPO4.2H2O in the enamel, which could then react with the CaF2 formed by the fluoride treatment. The formation of this apatitic fluoride appears to occur after the topical treatment and before CaF2 is lost or removed.

PB81-126104 Not available NTIS
National Bureau of Standards, Washington, DC.
A Mechanism for Incorporation of Carbonate into Apatite,
N. S. Chickerur, M. S. Tung, and W. E. Brown. 1980, 8p
Contract PHS-DE-05030
Pub. in Calcified Tissue International 32, p55-62 1980.

Octacalcium phosphate (Ca8H2(PO4)6.5H2O) is considered to be a precursor in the formation of

apatite in bones and teeth; a crucial step for incorporation of impurities appears to occur during its hydrolysis. The present study examines the role that octacalcium phosphate plays in the process of incorporation of carbonate into apatite. Chemical, X-ray diffraction, and infrared techniques were used. When octacalcium phosphate is hydrolyzed in the presence of sodium and carbonate ions in aqueous media, approximately one sodium and one carbonate ion seem to substitute for a calcium and phosphate ion, respectively, in forming apatite, and the a axis is shortened. The infrared spectrum of the product indicates that the carbonate is in the type B site, which is presumed to be a phosphate site. This mechanism is of particular importance since the presence of carbonate in human enamel appears to be related to caries susceptibility. A structural mechanism for the incorporation of impurities during hydrolysis of octacalcium phosphate is presented.

PB81-128860 PC **A09**/MF **A01**
Research Triangle Inst., Research Triangle Park, NC.
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
Final rept. 30 Jun 75-15 Jun 77,
Dale C. Jones, Kenneth R. McLeroy, Kent D. Nash, Babubhai V. Shah, and Sally H. Spetz.
Dec 80, 186p NCHSR-80-55
Contract PHS-HRA-230-75-0156

The purpose of the study was to perform a targeted analysis of spinal injury relating to enhancing the preparation of actuarial cost estimates of national catastrophic health insurance programs, and studying alternative public investments to prevent and treat spinal injury in the United States. The Research Triangle Institute reviewed expenditures related to spinal injury; described spinal injury service delivery systems; reviewed state-of-the-art medical technology required in the prevention, treatment, and rehabilitation of spinal injury; reviewed promising areas where preventive intervention could reduce expenditures related to spinal injury; and analyzed social costs and benefits related to treating patients afflicted with spinal injury. Major conclusions and recommendations are that large portions of spinal cord injuries occur before age 30, with life expectancy approaching that of an uninjured person; lifetime medical costs range from $135,000 to $346,000 per patient; and the total national annual costs approximate $827,458,000.

PB81-128878 PC **A02**/MF **A01**
Research Triangle Inst., Research Triangle Park, NC.
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
Executive summary rept. 30 Jun 75-15 Jun 77,
Dale C. Jones, Kenneth R. McLeroy, Kent D. Nash, Babubhai V. Shah, and Sally H. Spetz.
Dec 80, 18p NCHSR-8-56
Contract PHS-HRA-230-75-0156

The purpose of the study was to perform a targeted analysis of spinal injury relating to enhancing the preparation of actuarial cost estimates of national catastrophic health insurance programs, and studying alternative public investments to prevent and treat spinal injury in the United States. The Research Triangle Institute reviewed expenditures related to spinal injury; described spinal injury service delivery systems; reviewed state-of-the-art medical technology required in the prevention, treatment and rehabilitation of spinal injury; reviewed promising areas where preventive intervention could reduce expenditures related to spinal injury; and analyzed social costs and benefits related to treating patients afflicted with spinal injury. Major conclusions and recommendations are that large portions of spinal cord injuries occur before age 30, with life expectancy approaching that of an uninjured person; lifetime medical costs range from $135,000 to $346,000 per patient; and the total national annual costs approximate $827,458,000.

PB81-128944 PC **A05**/MF **A01**
Office of Science and Technology Policy, Washington, DC.
Federally-Supported Human Nutrition Research, Training, and Education: Update for the 1980s. I. Human Nutrition Research and Training.
5 Dec 80, 92p

This report is presented in three parts and four appendices: Part I includes an overview of Federal human nutrition research, research training, and education expenditures for FY 1979, and presents highlights of the activities of the participating agencies in human nutrition research and training from FY 1977 to FY 1979. Part II offers an analysis of critical domestic issues in human nutrition research, research training, and research manpower development for the coming decade and identifies particular areas in human nutrition research that require emphasis. Part III presents conclusions and recommendations for increasing the overall effectiveness and productivity of domestic Federal human nutrition research and research training efforts.

PB81-130510 PC **A14**/MF **A01**
Johns Hopkins Medical Institutions, Baltimore, MD. Health Services Research and Development Center.
Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
Final rept. 30 Jun 76-29 Jun 78,
Sam Shapiro, Pearl S. German, Donald M. Steinwachs, Elizabeth A. Skinner, and Gary A. Chase. Dec 78, 312p NCHSR-80-60
Grants PHS-HS-02269, PHS-HS-01964

In three Baltimore communities designated as disadvantaged by the HSA, household surveys were conducted to assess effect of population characteristics and available health resources on patterns of health care. In all communities, near poor individuals not on Medicaid are at special disadvantage. They receive less care for illnesses and less preventive care. Usual source of care did not influence utilization of health services among near poor except in one community where the near poor using an HMO had relatively high utilization. Type of usual care source did not influence receiving care for serious illness or chronic conditions in any community. For children, however, source of care appeared to be important. Those whose usual source was a hospital where large proportions receive care through a C & Y program, were more likely to receive care for illnesses and have relatively high proportions under six immunized. The community that had changed recently in population from white to black was at a particular disadvantage. Children were less likely to receive illness or preventive care or to see dentists.

PB81-130544 PC **A02**/MF **A01**
John F. Kennedy School of Government, Cambridge, MA.
Regulating Hospital Capital Investment: The Experience in Massachusetts. Executive Summary.
Final rept. 1 Aug 77-30 Jun 79,
Julianne Reich Howell. May 80, 15p NCHSR-80-61
Contract PHS-HS-02862

This study examines hospital capital investment among Mass. short-term general voluntary hospitals between 1967 and 1976, and assesses the impact of Certificate of Need regulation. A profile of capital expenditures for fiscal years 1967-1976 was developed from Mass. Rate Setting Commission data for 26 sample hospitals, stratified by teaching status and Boston versus non-Boston location. Case studies were conducted in nine sample hospitals to explore the determinants and consequences of major capital projects undertaken by the institution. Enormous capital expansion took place fror 1967-76. Hospitals in areas of rapid population growth significantly increased their bed size; other hospitals replaced or modernized inpatient facilities, and expanded ambulatory care capacity. All hospitals significantly expanded their ancillary service capacity. The impact of CON regulation was examined. By 1976 and beyond, CON review had reduced all dimensions of project scale and cost by as much as two-thirds of that originally proposed.

PB81-130551 PC **A17**/MF **A01**
John F. Kennedy School of Government, Cambridge, MA.
Regulating Hospital Capital Investment: The Experience in Massachusetts. Final Report.
Rept. for 1 Aug 77-30 Jun 79,
Julianne Reich Howell. May 80, 390p NCHSR-80-62
Contract PHS-HS-02862

This study examines hospital capital investment among Mass. short-term general voluntary hospitals between 1967 and 1976, and assesses the impact of Certificate of Need regulation. A profile of capital expenditures for fiscal years 1967-1976 was developed from Mass. Rate Setting Commission data for 26 sample hospitals, stratified by teaching status and Boston versus non-Boston location. Case studies were conducted in nine sample hospitals to explore the determinants and consequences of major capital projects undertaken by the institution. Enormous capital expansion took place from 1967-76. Hospitals in areas of rapid population growth significantly increased their bed size; other hospitals replaced or modernized inpatient facilities, and expanded ambulatory care capacity. All hospitals significantly expanded their ancillary service capacity. The impact of CON regulation was examined. By 1976 and beyond, CON review had reduced all dimensions of project scale and cost by as much as two-thirds of that originally proposed.

PB81-132334 PC **A03**/MF **A01**
Colorado Univ. Health Sciences Center, Denver.
An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
Final rept.,
Eileen A. Tynan, David Landes, Charles N. Huggs, Daniel T. Holub, and Linda D. Breed. Nov 80, 48p
Contract DHEW/HCFA-600-77-0051

This report summarizes swing-bed demonstrations in Texas, Iowa, and South Dakota. Under those demonstrations, 82 rural hospitals were permitted to provide long-term care in hospital beds normally restricted to the provision of acute care. The major conclusions of the evaluation are: (1) It is appropriate to implement a national swing-bed program in rural areas. (2) Such a program would be of benefit to rural communities in terms of meeting both long-term care and acute care needs. (3) The swing-bed concept appears to be a cost effective method for providing long-term care in rural areas. In addition, this report contains recommendations for implementing a nationwide swing-bed program.

PB81-133373 PC **A02**/MF **A01**
Ohio State Univ., Columbus.
The Impact of Mobile Coronary Care Units: Executive Summary.
Rept. for 1 Jan 76-31 Oct 78,
Martin D. Keller, Richard R. Lanese, Thomas N. Chirikos, Angelo A. Alonzo, and Richard P. Lewis. Jun 78, 8p NCHSR-81-17
Contract PHS-HS-02079
See also Final Report, PB81-133381.

The study was aimed at determining the impact of the mobile coronary care units (medic units) in the city of Columbus, Ohio, on outcomes of acute myocardial infarctions (AMI). An associated objective was the development of methods for evaluating such services in communities throughout the United States.

PB81-133381 PC **A14**/MF **A01**
Ohio State Univ., Columbus.
The Impact of Mobile Coronary Care Units: Final Report.
Rept. for 1 Jan 76-31 Oct 78,
Martin D. Keller, Richard R. Lanese, Thomas N. Chirikos, Angelo A. Alonzo, and Richard P. Lewis. Jun 78, 308p NCHSR-81-16
Contract PHS-HS-02079
See also Executive Summary, PB81-133373.Portions of this document are not fully legible.

Comparisons were made between users of mobile coronary care units (MCCU) and a matched sample of persons with cardiovascular emergencies who entered the hospital by other routes. Of 551 MCCU users, 290 were confirmed as acute myocardial infarctions (AMI), and of 551 controls, 270 were confirmed AMI. Users and nonusers were found to be the same with respect to social

and demographic variables and general health history. The major determining factor in MCCU use was the severity of acute illness. MCCU users sought help in a shorter period of time and were less likely to have pre-hospital physician evaluation. Fatality rates prior to hospital discharge were much greater among the AMI-MCCU users (21.7%) than among the AMI controls (1.5%). The very low rate among the controls indicated that the community of Columbus, Ohio had been 'saturated' with MCCU use. However, the rate of serious complications was much greater among MCCU users. It was estimated that approximately one out of ten MCCU users who were discharged alive from the hospital, there was little difference in 6 months survival between MCCU users and non-users. The data indicated clearly that MCCU saves lives at a reasonable cost. The study methods and outcome/cost estimation procedures are generalizable, with some adaptation, to other communities.

PB81-133613 PC **A16**/MF **A01**
Michigan Univ., Ann Arbor. Dept. of Medical Care Organization.
Determinants and Effects of Organizational Strategies of Control Directed at Quality of Care in Organized Ambulatory Care Settings.
Executive summary rept. (Final) 1 Sep 77-31 Aug 79,
Leon Wyszewianski. 3 Mar 80, 365p NCHSR-81-1
Grants PHS-HS-02315, PHS-1-R03-HS-02315-01A1

A frequently used method for evaluating the quality of medical care services is to ascertain whether certain representative or critical clinical tasks or procedures were performed. The principal purpose of this investigation was to determine to what extent performance of nonperformance of such clinical tasks in outpatient clinics is influenced by congruence between 'strategies of control' directed at assuring performance of the task and the characteristics of the tasks and the attitudes of the clinic's staff about the strategies. It was found that if a task is routine, and 'bureaucratic' strategies of control are directed at it, performance levels tend to be high. However, equally high performance levels were observed in some cases when the task was routine but no strategies were present, suggesting that bureaucratic strategies are only one type of mechanism that can lead to high performance for routine tasks. Consistent with those findings, clinic chiefs and those who perform the tasks perceived bureaucratic strategies of control to be appropriate only for routine tasks, and to be only one of the optional mechanisms available for achieving high performance of such tasks.

PB81-135790 PC **A09**/MF **A01**
Michigan Univ., Ann Arbor. School of Public Health.
Estimation of Spatial Demand for Hospital Services.
Final rept. 1 Sep 77-31 Aug 78,
Eugenia S. Carpenter, and Demetrius Plessas.
May 79, 198p NCHSR-80-73
Contract PHS-HS-02714

The major objectives of this study were twofold: (1) to test an alternative methodology for patient origin studies, utilizing hospital deaths as a proxy measure for all admissions; and (2) to develop and test synthetic measures of demand for tertiary care, utilizing a subset of hospital death cases, and apply these to the delineation of health service planning areas. The study sought to determine whether an approach to locational analysis problems in health planning could be developed which is less costly in terms of time and resources than patient origin studies based on hospital record systems. Results indicated that mortality data from vital statistics records provide a useful approximation of patient travel patterns to acute care hospitals. Hospital service area indices constructed from mortality statistics accurately predicted, on any aggregate regional basis, the results of a conventional patient origin study based on all hospital discharges. A method of classifying hospitals by diagnostic mix of mortality cases formed the basis for identifying death cause groupings associated with tertiary level care. On an individual hospital level, a higher ratio of tertiary to non-tertiary death cases was associated with greater distance from larger, more service intensive hospitals. On a regional level, referral patterns of tertiary care could be inferred.

PB81-855314 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Thomas H. Jones. Aug 80, 81p NERACEI NT0421
Sponsored by National Technical Information Service, Springfield, VA.

These abstracts deal with worldwide research reports on the general topic of pneumoconiosis. The emphasis is on "coal miners pneumoconiosis" (anthracosis) and silicosis, however, there are many references to other types such as "byssinosis", "asbestosis" and "aluminosis". The reports cover the detection/diagnosis, pathology, epidemiology and preventive aspects, as well as the social, legal and economic implications of this condition. (Contains 68 citations.)

UCLA-12-1253 PC **A09**/MF **A01**
California Univ., Los Angeles. Lab. of Nuclear Medicine and Radiation Biology.
Annual Progress Report, July 1, 1979-June 30, 1980.
1980, 184p
Contract AC03-76SF00012

Research progress is reported for the year 1979-1980. The report is divided into sections dealing individually with the divisions of Biomolecular and Cellular Science, Environmental Biology, and Nuclear Medicine. The sections have been individually entered into EDB. (ERA citation 06:001332)

6F. Environmental Biology

COO-2003-36 PC **A08**/MF **A01**
Michigan Univ., Ann Arbor. Great Lakes Research Div.
Phytoplankton and Physical-Chemical Conditions in Selected Rivers and the Coastal Zone of Lake Michigan, 1972.
C. L. Schelske, L. E. Feldt, and M. S. Simmons.
1980, 167p
Contract AS02-76EV02003

A very large data set was obtained on the nearshore environment of Lake Michigan during 1972. The data set is probably unique in that samples were collected and analyzed for a number of physical-chemical parameters and for phytoplankton standing crop and species composition. Phytoplankton identified during the study totaled 431 taxa of which 306 were diatoms, which serves to illustrate the magnitude of available data. Results are presented for eleven different transects sampled in April and for three of these transects which were sampled in September. In addition, transects for the St. Joseph, Kalamazoo, and Grand Rivers were sampled four or five times and each of these rivers were sampled from seven to eleven times in July. Data collected with depth presented in this report include water temperature. Secchi disc transparency, pH, specific conductance, dissolved reactive silica, nitrate nitrogen, and total phosphorus as physical-chemical variables. On transects samples with depth were obtained at stations 0, .2, .8, 1.6, 3.2, 6.4, 13, 26, and 52 km from shore, although the stations from 13 to 52 km were not sampled on every transect. Data related to phytoplankton include species composition and abundance, species diversity, chlorophyll a, and rates of carbon fixation. All these data were obtained only at 2 meters. (ERA citation 06:001348)

PB81-125676 PC **A02**/MF **A01**
Florida State Univ., Tallahassee. Dept. of Chemistry.
Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
Journal article,
Douglas W. Kuehl, and Ralph C. Dougherty. 18 Jan 80, 5p EPA-600/J-80-085, ERL.GB-J0070
Grant EPA-R-806334-00-10
Pub. in Analytical Chemistry, v14 n4 p447-449 Apr 80.

Commercial pentachlorophenol (PCP) contains significant quantities of tetrachlorophenol (TCP). The occurrence of TCP in environmental samples provides a chemical marker for PCP originating from commercial formulations. Negative chemical ionization mass spectrometry has been used to examine a commercial PCP formulation and a series of environmental and human samples. Tetrachlorophenol was determined by the ion current at m/z 229, tetrachlorophenoxide, and PCP was determined by the ion current at m/z 267, pentachlorophenoxide. The ion current at m/z 267 may include contributions from the oxygen/chloride exchange product of hexachlorobenzene, an environmental precursor of PCP. The ratio of PCP to TCP in Dowcide G-ST, a commercial PCP formulation was 2.5 plus or minus 0.1. The ratio of m/z 267 to m/z 229 in a jellyfish, Mnemiopsis macrydi, from the Gulf of Mexico was 2.7 plus or minus 0.1, in human seman it was 4.1 plus or minus 0.1, and in human adipose tissue it was 15.5 plus or minus 0.1. PCP in the seman was concentrated in the sperm celis by a factor of 9.

PB81-126450 PC **A07**/MF **A01**
Virginia Commonwealth Univ., Richmond.
Study of Pathogenic Free-Living Amebas in Fresh-Water Lakes in Virginia.
Final rept. Oct 76-Jan 80,
Richard J. Duma. Dec 80, 145p EPA-600/1-80-037
Grant EPA-R-805014

Pathogenic free-living amebas may produce fatal infection of the central nervous system known as Primary Amebic Meningoencephalitis (PAM). In Richmond, Virginia, 17 cases have occurred, more than in any other location in the world. The objectives were to examine freshwater lakes in the Richmond, VA area for pathogenic amebas, particularly Naegleria, and gain some understanding of conditions which might affect their occurrence. Nine lakes with different limnological characteristics were sampled biweekly. Ameboflagellates consistent with Naegleria were often isolated from all lakes, but pathogenic ones were found infrequently. The reason for this finding appeared to be temperate climate and short periods of time (days to weeks) that sustained elevations of water temperature (>26C) occurred. No quantitative relationship of coliform bacteria to pathogenic amebas or ameboflagellates was found, but Pseudomonas fluorescens and Serratia marcescens appeared in the laboratory to be inhibitory to pathogenic Naegleria. In virtually every lake from which Ps. fluorescens was consistently isolated, no pathogenic Naegleria were found. The majority of pathogens and the most virulent organisms were isolated from the North Anna Reservoir complex which contained several coolant lagoons and canals for a nuclear power plant. Studies of this complex suggested that if natural fresh waters are artificially heated for a sustained period of time, pathogenic Naegleria may be selected or concentrated, even in a cold or hostile climate, possibly serving as a source for contaminating other nearby waters. Pathogenic Naegleria were isolated only with thermal enrichment, but not before or after.

PB81-130049 PC **A04**/MF **A01**
Colorado Cooperative Fishery, Research Unit, Fort Collins.
Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant,
Leonard A. Walch. Jul 80, 71p REC-ERC-79-17

Mean movement rates of 34 lake trout (Salvelinus namaycush) tagged with ultrasonic transmitters in Twin Lakes, Colorado, ranged from 1.1 m/min in the fall to 1.6 m/min in the summer. Movement rates between 0830 and 1130 were significantly higher than between 2230 and 0500 during spring, summer, and fall. During the fall, afternoon movements were significantly greater than night movements. It is likely that the lake trout of Twin Lakes will be least vulnerable to entrainment by pumping operations between 2230 and 0500 and most vulnerable between 0830 and 1130 during spring, summer, and fall. Seasonally, they will be least vulnerable in the winter and most vulnerable in the spring.

PB81-130536 PC **A20**/MF **A01**
Oak Ridge National Lab., TN.

Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
Final rept.,
John S. Drury, John T. Ensminger, Anna S. Hammons, James W. Holleman, and Eric B. Lewis. Sep 80, 464p ORNL/EIS-85, EPA-600/1-78-050

This document is a review of the scientific literature on the biological and environmental effects of fluoride. Included in the review are a general summary and a comprehensive discussion of the following topics as related to fluoride and specific fluorine-containing compounds: physical and chemical properties; occurrence; synthesis and use; analytical methodology; biological aspects in microorganisms, plants, wild and domestic animals, and humans; and distribution, mobility, and persistence in the environment. The document also contains an evaluation of potential hazards resulting from fluoride contamination of the environment and suggests current research needs. More than 1000 references are cited.

PB81-132052 PC **A11**/MF **A01**
Texas Instruments, Inc., Dallas. Ecological Services.
Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
Final rept.,
James Gaw. Oct 80, 227p PPSP/CPC-80-7

The primary objective of the C.P. Crane finfish thermal effects study, was to determine whether the distribution and health of the finfish community differed between heated and non-heated areas in the plant vicinity. Sampling was conducted with trawls, gill nets, and beach seines during the summer, spring, and winter seasons. Statistically significant differences were observed for spot and white perch. The degree and amount of parasitism was examined and was found to be significant only during the spring months.

PB81-132409 PC **A21**/MF **A01**
Oak Ridge National Lab., TN.
Review of the Environmental Effects of Pollutants: X. Toxaphene.
Final rept.,
Patrick R. Durkin, Philip H. Howard, Jitendra Saxena, Sheldon S. Lande, and Joseph Santodonato. Nov 79, 498p ORNL/EIS-130, EPA-600/1-79-044
Contract W-7405-eng-26
Prepared in cooperation with Syracuse Research Corp., NY. Center for Chemical Hazard Assessment, and Illinois Univ. at Urbana-Champaign. Coll. of Veterinary Medicine.

The environmental effects of toxaphene are extensively reviewed. Information is presented on chemical properties and analytical techniques, environmental occurrence, cycling, and fate, as well as on food chain interactions. Biological aspects of toxaphene in microorganisms, plants, wild and domestic animals, and humans and test animals are reviewed, including metabolism, toxicity, carcinogenicity, mutagenicity, and teratogenicity.

6G. Escape, Rescue, and Survival

AD-A091 986/0 PC **A06**/MF **A01**
CASDE Corp., Torrance, CA.
Inflatable Liferaft Stability Study.
Final rept. Jul 78-Sep 79,
F. J. Nickels. Sep 79, 107p USCG-D-81-79
Contract DOT-CG-817775-A

This study was initiated to develop a framework for the evaluation of the general principles of inflatable liferaft stability and within that framework to evaluate the various concepts for stability enhancement. A Quasi-Static Inflatable Liferaft Stability Model was developed to evaluate the stability due to static effects; the analysis of dynamic effects was deferred to a later study; the procedure used is analogous to the evaluation of ship stability. Wind tunnel tests were conducted to determine drag, lift, and moment coefficients as functions of pitch angle and bottom exposure. Model basin tests were also conducted. The stability Model was used to produce curves of net righting (or heeling) moment. The study was conducted for a flat bottom liferaft as well as for those with ballast pockets, a toroidal ballast bag, and a hemispherical ballast bag. (Author)

AD-A092 159/3 PC **A04**/MF **A01**
BioTechnology, Inc., Falls Church, VA.
Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
Final rept.,
Martin G. Every, and James F. Parker, Jr. Nov 80, 64p
Contract N00014-77-C-0253
Presented at the SAFE Symposium (1979), Las Vegas, NV, and the Joint Combat SAR Development Committee (41st), 17 Jan 80, Maxwell AFB, AL.

This report examines specific problems that affect the rescue of naval aviators downed under combat conditions. It discusses the pros and cons of alternative rescue systems such as air-to-air, flyaway, ground-to-air, etc. The subsystems of an air-to-air rescue system are evaluated as to operational practicability. The air-to-air system is modeled for potential effectiveness utilizing the actual ejection and survival data of the Navy aircrewmen who ejected and became prisoners of war. (Author)

6H. Food

PAT-APPL-6-187 380 PC **A02**/MF **A01**
Department of Agriculture, Washington, DC.
Apparatus for Removing Corn from Cob.
Patent Application,
George H. Robertson, and Daniel F. Farkas.
Filed 15 Sep 80, 21p PB81-129439
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

An apparatus for removing intact kernels of corn from the cob is described. The apparatus of the invention includes a frame with friction means attached thereto for removing whole, intact kernels of corn from the cob. Also attached to the frame are means for driving the friction means, and means for maintaining the friction coefficient of the friction means.

PB81-120727
(Order as PB81-120677, PC **A03**/MF **A01**)
National Marine Fisheries Service, Gloucester, MA. Gloucester Lab.
Instrument for Determining Depth of Dehydration of Frozen Fish,
John G. Callan, and John J. Ryan. Jun 80, 4p
NOAA-80101509-5
Included in Marine Fisheries Review, v42 n6 p32-34 Jun 80.

United States Standards for grades of various frozen seafood products include as a quality defect the presence of dehydration. This report describes the design, construction, and operation of a dehydration depth gauge to measure the degree of dehydration in frozen seafoods.

PB81-126146 Not available NTIS
National Bureau of Standards, Washington, DC.
Migration Models for Polymer Additives,
I. C. Sanchez, S. S. Chang, and L. E. Smith. 1980, 8p
Pub. in Polym. News 6, p249-256 1980.

An important problem in food packaging is the absorption into food of chemicals present in the packaging material. For the past two years, the Polymer Science and Standards Division of the National Bureau of Standards has been studing the migration of additives from polymeric packaging materials to food simulating solvents. This study has been carried out under an interagency agreement with the Bureau of Foods of the U.S. Food & Drug Administration. Our primary goal in this research program has been to develop a migration model which can be used as a guide for the food packaging industry and serve as a sound scientific basis for FDA regulatory decisions. What follows is a brief progress report of our study.

PB81-129975 PC **A04**/MF **A01**
National Research Council, Washington, DC. Board on Science and Technology for International Development.
Postharvest Food Losses in Sri Lanka; Report of a Workshop, 11-16 February 1980.
Final rept.
Dec 80, 70p CIR/BOSTID-80/SRI
Contract AID/ta-C-1433
Sponsored in part by National Science Council of Sri Lanka, Colombo, and Sri Lanka Foundation Inst., Colombo.

The report describes a joint workshop organized by the National Science Council of Sri Lanka and the U.S. National Academy of Sciences. The workshop objective was to make recommendations for reducing postharvest food losses in three general categories--food grains, perishables, and fish.

6K. Life Support

AD-A091 892/0 PC **A05**/MF **A01**
Navy Experimental Diving Unit, Panama City, FL.
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
Final rept. 5 May-13 Jun 80,
M. J. Harwood. Jul 80, 86p Rept no. NEDU-14-80

Specific objectives of this technical evaluation were to achieve 100 hours bottom time at depths to 150 FSW and to verify Mean Time Between Failures (MTBF) and Mean Time To Repair (MTTR). The results of the TECHEVAL revealed many deficiencies which should be corrected and tested prior to OPEVAL.

AD-A092 204/7 PC **A02**/MF **A01**
Defence and Civil Inst of Environmental Medicine, Downsview (Ontario).
Evaluation of the Scott Aviox Emergency Oxygen System during a Rapid Decompression to 25,000 Feet,
A. G. Hynes. Sep 80, 11p Rept no. DCIEM-80-R-42

A new emergency supplemental oxygen system is the Scott Aviox Single Pak, which utilizes solid state oxygen generators composed of sodium chlorate for oxygen production. The sodium chlorate is degraded by an exothermic chemical reaction that liberates a continuous flow of oxygen. As this method of oxygen production was novel to the Canadian Forces, a series of evaluations was undertaken to determine the overall reliability and oxygen output of the system under static conditions. Results of these tests proved favorable; therefore, to fully evaluate this system's performance, it was subjected to the next stage which consisted of use by human subjects under hypobaric conditions. During this experiment five male subjects were individually exposed to hypobaric conditions. Each was subjected to a rapid decompression from 8,000 to 25,000 feet. Arterial oxygen saturation levels were also a monitored throughout the experiment to determine the degree of protection this system afforded against hypoxia. Experimental results and observations indicated that the subjects had very little difficulty in placing the system into use after the decompression. Recorded oxygen saturation levels show that this system provided more than the required degree of hypoxia protection at the experimental altitudes.

AD-A092 314/4 PC **A06**/MF **A01**
Naval Coastal Systems Center, Panama City, FL.
MK 11 and MK 12 CO2 Scrubber Development.
Technical rept.,
R. W. Dowgul. Aug 80, 104p Rept no. NCSC-TR-353-80

Empirical testing is a major development tool in the design of CO2 scrubbers used in diving systems. Suitable analytical models for predicting CO2 scrubber behavior are currently under considera-

tion. This report documents the development of CO2 scrubbers for the MK 11 and MK 12 diving systems. Plots of various temperatures, pressures, flows, and system efficiencies are presented. For specific details Hydrospace notes and/or NEDU manned test reports are referenced where applicable. (Author)

6L. Medical and Hospital Equipment

AD-B043 559/4 PC **A07**/MF **A01**
Booz-Allen and Hamilton, Inc., Bethesda, MD.
Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
Final rept. 17 May 79-21 Jan 80,
Sharon Bishop, Peter Gaskin, and Michael Peters. 21 Jan 80, 131p Rept no. BA-09005-642-002
Contract N00600-79-D-0845
Distribution limitation now removed.

This report describes an analysis and evaluation of the 1979 concept testing of the EMIT portable urinalysis equipment at four U.S. Navy sites. Findings are based on status and statistical reports submitted by the test sites and on personal interviews with personnel involved with the concept test. The report reviews the management and implementation of the EMIT concept test, and evaluates the test's impact on current drug abuse identification effort, deterrence of drug abuse, and mission performance of units tested and support commands. Conclusions are that the impact of the concept test on identification was extremely limited,the impact on deterrence was minimal, and the impact on mission performance was negligible. Involved Commands endorsed continuation of testing by portable equipment but cited the need for improvements. Specific recommendations are made regarding concept continuation, management support, and personnel resources and logistic support of the concept program. (Author)

PAT-APPL-6-157 380 PC **A03**/MF **A01**
Department of Health and Human Services, Washington, DC.
Blood Gas Analyzer System.
Patent Application,
Albert K. Lee. Filed 9 Jun 80, 28p PB81-126500
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This invention relates to blood gas monitoring systems, and more particularly to a system for monitoring blood gases and maintaining oxygen delivery to a patient during open-heart surgery and other extracorporeal blood flow situations.

PAT-APPL-6-163 952 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
Intracranial Pressure Monitoring Device.
Patent Application,
Lawrence E. Thibold. Filed 30 Jun 80, 12p PB81-131385
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This invention relates to patient monitoring instruments, and more particularly to an instrument for intracranial pressure monitoring of post-operative neurosurgical patients.

PAT-APPL-6-186 381 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
Contrast Resolution Tissue-Equivalent Ultrasound Test Object.
Patent Application,
Hector Lopez, and Stephen W. Smith. Filed 11 Sep 80, 19p PB81-131450
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The present invention relates to a calibration phantom or test object for simulating animal or human cell tissue which can calibrate, or test diagnostic ultrasound scanners.

PB81-131773 PC **A23**/MF **A01**
Texas Heart Inst., Houston.
Development and Evaluation of a Long-Term Low Profile Intracorporeal (Abdominal) Left Ventricular Assist Device (THI E-Type ALVAD) Fascicle I.
Comprehensive technical progress rept. Oct 77-Oct 80,
John C. Norman. Oct 80, 528p NIH-N01-HV-7-2936-2
Contract N01-HV-7-2936

This comprehensive (two fascicle) technical report describes and details the progress made in the development and evaluation of a long-term low profile intracorporeal (abdominal) left ventricular assist device (THI E-Type ALVAD). Fascicle I describes the cumulative design and development of the THI E-type ALVAD and its components. It includes integration of the E-type ALVAD with electrical energy converters; in-vitro analyses of integrated systems; in-vivo hemodynamic evaluations in calves; THI E-type ALVAD feasibility studies and ex-vivo pseudoneointimal analyses. Fascicle II includes relevant correspondence, references (mechanical circulatory assistance) and selected THI E-type ALVAD publications.

PB81-132987 PC **A03**/MF **A01**
Union Carbide Corp., Bound Brook, NJ. Chemicals and Plastics.
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
Final rept. 1 Dec 77-30 Jun 79,
William F. Beach, and Donald D. Stewart. 15 Jul 80, 30p NIH-N01-HV-4-2950-6
Contract N01-HV-4-2950
See also report dated 9 Aug 76, PB-260 669.

Poly(vinyl acetate-co-2%-crotonic acid) 60% sodium ionomer hydrogel was found to be the most thromboresistant hydrogel evaluated in our screening studies. The ionomer hydrogel was graft-coated onto substrate surfaces from an ethanol solution of its monomers using cobalt 60 radiation. Smoother hydrogel surfaces were obtained using injection-molded polypropylene implant rings in place of machined rings. Ionomer hydrogel coatings of up to 16 microns were cobalt 60 radiation-grafted on polypropylene test rings for in-vivo testing at UBTL. The test results were poorer than for the cobalt 60 emulsion-grafted test samples which exhibited higher water uptake values. A van de Graaff radiation technique was developed as an alternate grafting procedure for hydrogel coatings. Seamless injection-molded polypropylene rods were supplied to the University of Michigan for ex-vivo testing in their biocompatibility test apparatus.

6M. Microbiology:

PB81-126567 PC **A02**/MF **A01**
Georgia State Univ., Atlanta. Dept. of Biology.
The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
Journal article,
S. A. Crow, S. L. Bell, and D. G. Ahearn. 1980, 7p EPA-600/J-80-087, ERL.GB-J0080
Contract N00014-76-1058, Grant EPA-R-80477
Pub. in Botanical Marina, v23 p117-120 1980.

Studies of the hydrocarbon utilizing yeasts, Candida maltosa and C. lipolytica, have shown that both were capable of reducing recoverable amounts of branched chain and aromatic hydrocarbons in a mixture of naphthalene, tetradecane, hexadecane, pristane (tetra-methylpentadecane). Cells of C. lipolytica grown on either glucose or tetradecane were capable of binding (rendering unextractable) nearly 50% of the hydrocarbon mixture within 3 hours. In contrast cells of C. maltosa bound hydrocarbons only after growth on a hydrocarbon medium. Uptake of selected paraffinic hydrocarbon was not altered by the presence of naphthalene. Pristane uptake was concentration dependent for C. maltosa but not for C. lipolytica. Uptake, transport, and metabolism of hydrocarbons in C. maltosa and C. lipolytica differ.

PB81-126617 PC **A02**/MF **A01**
Environmental Research Lab., Athens, GA.
Correlation of Microbial Degradation Rates with Chemical Structure.
Journal article,
N. Lee Wolfe, Doris F. Paris, William C. Steen, and George L. Baughman. 17 Mar 80, 4p EPA-600/J-80-151
Pub. in Environmental Science and Technology, v14 n9 p1143-1144 Sep 80.

Structure-reactivity relationships are established for the microbial degradation of selected organic compounds. Second-order microbial degradation rate constants determined in natural water samples for six compounds correlate with the second-order alkaline hydrolysis rate constants. Also, second-order microbial degradation rate constants for four phthalate esters obtained with organisms from sediment-water samples correlate with the second-order alkaline hydrolysis rate constants. Similar correlations are demonstrated for the rates of oxidation of substituted phenols by mixed microbial cultures isolated from soils and Hammett delta constants.

6N. Personnel Selection and Maintenance (Medical)

AD-A092 313/6 PC **A11**/MF **A01**
Texas Tech Univ., Lubbock. Inst. for Biotechnology.
Review of the Strength and Capacity Data for Manual Material Handling Activities.
Final rept. May 77-Nov 79,
M. M. Ayoub, N. J. Bethea, S. Asfour, G. Calisto, and C. Grasley. Nov 79, 240p
Contract N63126-77-M-1719

This report describes the results of activities to reveiw the strength and capacity data for Manual Material Handling Activities (MMHA). These efforts primarily involved a reveiw of MMHA literature, preparation of an annotated bibliography and a summary of literature findings. To supplement these findings, experimental data were collected on the effect of the location of the center of gravity of the load and the effects of the presence or absence of couplings on the amount of weight lifted. The results from both of the research efforts and the literature review were used to formulate recommendations for the revision of Military Standard 1472B for MMHA. A brief summary of the results found for lift/lower, push/pull and carry activities is provided in the text. (Author)

AD-A092 359/9 PC **A02**/MF **A01**
Army Research Inst. of Environmental Medicine, Natick, MA.
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets,
William L. Daniels, James E. Wright, Dan S. Sharp, Dennis M. Kowal, and Robert P. Mello. 23 Apr 80, 17p Rept no. USARIEM-M-12/80

Eighteen cadets (11 males, 7 females) were studied on five occasions during their first two years of training at the U.S. Military Academy. Studies began during their first week at the Academy and continued until the end of the second academic year. During the study, the regimented lifestyle imposed comparable environmental and dietary factors. VO2 (1/min), lean body mass and body weight increased significantly in both groups. Per cent body fat was significantly reduced only after the first summer of training and then returned to initial values. VO2max (ml/kg.min) did not change in males during the study. However, females increased significantly after the initial 6 weeks of training (44.2 to 48.8 ml/kg.min). They remained at this level through the second summer of training. However, by the end of their second academic year, females' values dropped to 45.9 ml/kg.min. Maximal last year of training, arm and shoulder strength increased (9.3%) in males but was unchanged in females. Our results suggest that even extended military training did not enable females to significantly narrow the difference with male cadets in terms of muscle strength and aerobic power. (Author)

60. Pharmacology

AD-A091 901/9 PC **A02**/MF **A01**
Army Inst. of Dental Research, Washington, DC.
A Comparison of the Inflammatory Response Produced by Commercial Eugenol and Purified Eugenol,
Joseph G. Webb, Jr., and Norman E. Bussell. 22 May 80, 17p
Supersedes AD-A086 402.

Eugenol is one of the major therapeutic agents in dentistry. The inflammatory response to purified and commercial eugenol are compared, and the inflammatory response to zinc oxide/eugenol prepared with either purified or commercial eugenol are also compared. The results indicate that eugenol is inflammatory but the impurities present in commercial eugenol increase the inflammatory response to eugenol and zinc oxide eugenol. (Author)

AD-A092 049/6 PC **A02**/MF **A01**
Air Force Aerospace Medical Research Lab., Wright-Patterson AFB, OH.
Effects of Ketamine HCl-Xylazine HCl Combination on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
Master's thesis,
Richard A. Reutlinger, Alva A. Karl, Steven I. Vinal, and Mary Jo Nieser. 26 Nov 79, 7p Rept no. AFAMRL-TR-79-109
Pub. in the American Jnl. of Veterinary Research, v41 n9 p1453-1457 Sep 80.

No abstract available.

AD-A092 050/4 PC **A02**/MF **A01**
School of Aerospace Medicine, Brooks AFB, TX.
The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
Final rept.,
Mark R. Coffman, James W. Klein, and Thomas J. Tredici. 1980, 7p Rept no. SAM-TR-78-339
Pub. in Annals of Ophthalmology, v12 n3 5p Mar 80.

No abstract available.

AD-A092 285/6 PC **A03**/MF **A01**
Army Medical Research Inst. of Infectious Diseases, Frederick, MD.
Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
Interim rept.,
Elaine A. Ferrara, John S. Oishi, Robert W. Wannemacher, Jr., and Edward L. Stephen. 31 Oct 80, 33p

Ribavirin has been shown to be have broad spectrum antiviral activity. To study its intracellular distribution and disappearance rats a single dose of 10 mg/kg which contained 10 micro Ci of 14C-ribavirin was injected intravenously (i.v.) into rhesus monkeys and intramuscularly (i.m.) into monkeys and rats. Except for peak plasma concentrations and the initial phases of the plasma disappearance and urine excretion curves, no significant difference was observed between plasma, tissue or urine values for i.m. or i.v. injected monkeys. Plasma disappearance curves were triphasic; plasma radioactivity was similar for both monkeys and rats. rats excreted radioactivity in the urine more rapidly and to a greater extent (82% excreted in 24 h) than did monkeys (60% excreted in 72 h). In the rat only 3% of the injected 14C-ribavirin was detected in expired CO2. Therefore, for both species, urine was the major route for the elimination of labeled ribavirin and its metabolites from the body. In monkeys, the amount of radioactivity in blood cells increased through 48 h and remained stable for 72 h, while in rats radioactivity decreased at a rate similar to the plasma disappearance curve. Concentrations of radioactivity at 8 h were consistently greater in the monkey than in the rat for all organs except the brain. Thus, these differences in blood cellular components and organ content and in urine excretion suggested that there was greater tissue retention of ribavirin in the monkey than in the rat. If cellular uptake and retention of ribavirin in humans is similar to that observed in monkeys, then the multiple-dosing schedule based on early rapid excretion in rats may not be the appropriate usage of this antiviral drug. (Author)

AD-A092 340/9 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
Naloxone Alteration of Physiological Parameters in Spinally Transected Animals,
Alan I. Faden, T. P. Jacobs, and John W. Holaday. 1980, 6p
Pub. in Transactions of the American Neurological Association, v104 p1-5 1979.

No abstract available.

AD-A092 341/7 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
Opiate-Like Effects of Electroconvulsive Shock in Rats: A Differential Effect of Naloxone on Nociceptive Measures,
John W. Holaday, and Gregory Lucas Belenky. 15 Sep 80, 12p
Pub. in Life Sciences, v27 n21 p1929-1938 1980.

No abstract available.

AD-A092 342/5 PC **A02**/MF **A01**
Walter Reed Army Inst. of Research, Washington, DC.
Reduction of Heroin Intake in Baboons by an Economic Constraint,
Timothy F. Elsmore, G. V. Fletcher, D. G. Conrad, and F. J. Sodetz. 8 Dec 78, 4p
Pub. in Pharmacology Biochemistry and Behavior, v13 n5 p729-731 1980.

No abstract available.

PAT-APPL-6-105 079 PC **A02**/MF **A01**
Department of Health, Education, and Welfare, Washington, DC.
Toluidine Blue Rinse for the Detection of Squamous Carcinoma of the Oral Cavity and Other Structures Composition and Method.
Patent Application,
Arthur Mashberg. Filed 19 Dec 79, 13p PB81-131443
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The patent application describes a method clinical diagnosis and a composition for detecting malignant lesions of the oral cavity by utilizing as a rinse, toluidine blue preferably in acetic solution of water and ethanol. A preferred rinse is 5 cc 1% toluidine blue solution which is utilized in 1% acetic and water. In the method the solution (5-10 cc) is poured into floor of mouth and patient is advised to rinse and gargle.

PAT-APPL-6-110 045 PC **A02**/MF **A01**
Department of Health, Education, and Welfare, Washington, DC.
Method for Treating Intraocular Malignancies.
Patent Application,
Miguel F. Refojo, and Hsaio S. Liu. Filed 7 Jan 80, 25p PB81-131393
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The patent application discloses an improved process for dispensing a lipid soluble labile drug, i.e. 1,3-bis-(2-chloroethyl)-1-nitrosourea (BCNU) by diffusion through a silicone capsule implanted at a periocular site to an intraocular site within an animal body being treated with the drug. The improvements wherein the silicone capsule is provided with a tube sealed at the distal and thereof and provided with longitudinal slit cut through the tube wall inside the capsule for filling the capsule following implantation of the capsule. The capsule is implanted surgically near the site being treated so that the tube is accessible for filling without further surgical procedures. The drug is injected into the capsule through the tube in the form of a solution in a solvent which is non-toxic to the animal being treated, inert with respect to the drug dissolved therein and capable of diffusing from the capsule within 5 hours to leave a residue of the drug in the capsule.

PAT-APPL-6-110 293 PC **A02**/MF **A01**
Department of Health, Education, and Welfare, Washington, DC.
Ethiodized Oil Emulsion for Intravenous Hepatography.
Patent Application,
Michael Vermess, Dulal C. Chatterji, George J. Grimes, Jr., and Joseph F. Galielli. Filed 8 Jan 80, 22p PB81-129660
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The present invention is directed towards the examination of formulations and evaluations of ethiodized oil emulsions. It is also concerned with formulations of ethiodized oil emulsified with lecithin which show about 30-35% of oil particles in the range 2-3 microns. A dosage utilized for animals, such as rabbits and monkeys for this ethiodized emulsion is 0.1-0.5 ml/kg utilizing computerized tomography, with a preferred dosage of .2 ml/kg for computerized tomography, and a dosage of 2 ml/kg for conventional X-rays.

PAT-APPL-6-150 320 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
Inactivation on Non-A, Non-B Hepatitis Agent.
Patent Application,
Edward Tabor, and Robert J. Gerety. Filed 16 May 80, 11p PB81-131427
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This invention relates to a method of inactivating a non-A, non-B hepatitis agent by means of formalin utilized in extended treatment. The range of formalin treatment utilizes a concentration of 1:1,000 - 1:10,000, preferred 1:1,000, and the duration of treatment is from 24-120 hours at any temperature with a preferred 96 hours (4 days) at 37 plus or minus 4C. This formalin-treated or otherwise inactivated agent, or portions of the agent, may be later used to produce a vaccine against non-A, non-B hepatitis.

PAT-APPL-6-172 086 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
Patent Application,
Richard P. Blye, and Hyun K. Kim. Filed 24 Jul 80, 16p PB81-129652
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

It is a primary object of the invention to provide a compound which has progestational and inherent estrogenic characteristics and significantly prolonged anti-fertility effects in female mammals. Still another object of the invention is to provide methods for long-lastingly suppressing fertility in a female mammal using the compound in accordance with the first object of the invention. The above and other objects are achieved in accordance with the present invention by providing a novel steroid, namely, 7 alpha-methylnorethindrone enanthate which is useful as an anti-fertility agent when administered to female mammals. In addition to having progestational and estrogenic characteristics, the compound suppresses fertility for prolonged periods following a single injection.

PAT-APPL-6-175 594 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
Patent Application,
Gary L. Peck. Filed 5 Aug 80, 21p PB81-131401
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

In a method of alleviating nodulocystic and conglobate acne in humans by the oral administration of 13-cis-retinoic acid, the improvement comprising: administering the 13-cis-retinoic acid in a high dosage of from 1.0 to 2.0 mg/kg/day for from 2 to

4 weeks; and reducing the amount of 13-cis-retinoic acid to a low dosage of from 0.25 to 0.5 mg/kg/day for a period of from 12 to 14 weeks, so that the total treatment period is about 16 weeks.

PAT-APPL-6-190 064 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
N-Acetyl-Cysteine Protects Against Cardiac Damage from Subsequently-Administered Cardio-Toxic Anthracycline in Cancer Therapy.
Patent Application,
Charles E. Myers. Filed 23 Sep 80, 12p PB81-131419
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The cardiac damage, occurring after treatment with an anthracycline, such as adriamycin, is prevented when N-acetyl-cysteine is orally administered about one hour prior to the treatment with the anthracycline.

PATENT-4 233 215 Not available NTIS
Department of Health and Human Services, Washington, DC.
Aziridinyl Quinone Antitumor Agents.
Patent,
John S. Driscoll, A. Hameed Khan, and Feng-Te Chou. Filed 24 Oct 78, patented 11 Nov 80, 11p PB81-129686, PAT-APPL-954 218
Supersedes PB80-114895.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

The use of aziridinyl quinones as antitumor agents against transplanted tumors in mice is disclosed. A compound which has been found to be particularly effective is the compound 2,5-diaziridinyl-3,6-bis (carboethoxyamino)-1,4-benzoquinone. Treatment is described in connection with several transplanted mouse tumor test systems including various forms of leukemia, for example, as well as B16 melanoma, Lewis lung carcinoma, and the ependymoblastoma brain tumor system.

PB81-133746 PC **A10**/MF **A01**
National Inst. on Drug Abuse, Rockville, MD. Div. of Research.
GC/MS Assays for Abused Drugs in Body Fluids,
Rodger L. Foltz, Allison F. Fentiman, Jr., and Ruth B. Foltz. 31 Dec 80, 212p NIDA/RD-80-05, DHEW/PUB/ADM-80-1014
Report on National Institute on Drug Abuse, Research Mono. 32. Prepared in cooperation with Utah Univ., Salt Lake City and Battelle Columbus Labs., OH. Sponsored in part by National Clearinghouse for Drug Abuse Information, Rockville, MD.

This monograph presents a collection of methods for the quantitative analysis of several important drugs of abuse by the technique of gas chromatography-mass spectrometry (GC/MS), arranged by chapters on specific drugs to assist researchers in setting up such assay procedures in their own laboratories. These assays are useful in the study of pharmacology and pharmacokinetics of drugs of abuse, and also in forensic toxicology. Chapter 2 deals with considerations common to all of the assays. Chapters 3 through 13 deal individually with PCP, methaqualone, methadone, THC, cocaine, morphine, diazepam, amphetamine, methamphetamine, DOM, and mescaline.

6P. Physiology

AD-A092 008/2 PC **A02**/MF **A01**
Systems Research Labs., Inc., Dayton, OH.
Suprathreshold Processing of Complex Visual Stimuli: Evidence for Linearity in Contrast Perception,
Arthur P. Ginsburg, Mark W. Cannon, and Michael A. Nelson. 18 Sep 79, 5p AFAMRL-TR-79-5
Contract F33615-75-C-0127
Pub. in Science, v208 p619-621, 9 May 80.

No abstract available.

PB81-133316 Not available NTIS
National Bureau of Standards, Washington, DC.
Developing Definitive Methods for Human Serum Constituents--A Progress Report from the CAP (College of American Pathologists) NBS Research Associate,
Michael J. Welch. Dec 79, 4p
Sponsored in part by Food and Drug Administration, Washington, DC., and College of American Pathologists, Skokie, IL.
Pub. in Pathologist XXXIII, n12 p673-676 Dec 79.

This paper is a report to be published in Pathologist, the monthly journal of the College of American Pathologists (CAP). The report covers the principal activities of Michael Welch, who is a Research Associate at NBS, sponsored by the CAP. These activities are part of the effort of the Organic Analytical Research Division to develop definitive methods for organic constituents of human serum. Isotope dilution mass spectrometry (IDMS) is the analytical technique chosen for these methods. Definitive methods and IDMS are described in the report. Work has been completed on a definitive method for cholesterol; a brief description of the method and a table listing representative results are included. The progress of work on glucose, uric acid, urea, and creatinine is also described.

6Q. Protective Equipment

AD-A091 934/0 PC **A02**/MF **A01**
Air Force Occupational and Environmental Health Lab., Brooks AFB, TX.
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
Final rept.,
Thomas H. Lillie, Mark A. Hamilton, James M. Livingston, and Kathy Porter. Sep 80, 11p Rept no. OEHL-80-35

The mean quantities of pesticide residue remaining in pesticide treated cloth samples were compared after washing in cold (30 C), warm (43 C), or hot (60 C) water. The pesticides malathion, bromacil, diazinon, chlordane, and propoxur were tested. A significant ($p = 0.01$) amount of pesticide residue ws removed regardless of water temperature; however, there was a trend toward increased residue removal with increased temperature. It is recommended that the wash water temperature be > or = 60 C to achieve maximum decontamination of pesticide applicator clothing. (Author)

AD-A092 380/5 PC **A04**/MF **A01**
Springborn Labs., Inc., Enfield, CT.
Development of a Two-Piece Mask and Lens and Mold for Same.
Final rept.,
Tibor Gabris, and Stephen B. King. May 80, 72p ARCSL-CR-80031, AD-E410 332
Contract DAAA15-77-C-0008

Modified contract objective was to screen and modify available elastomers for use as lenses for a mask. Also, a program to bond such a lens to a rubber faceblank was required. Two molds-one faceblank less lens area mold and one lens mold were required. By many tests named in the keywords of this and next pages, a Nordel 1320 vulcanizate; covulcanized Nordel 1320/Vynathene CY903; Vynathene EY903 vulcanizate; Elvax 150 vulcanizate and LR3-463 polyurethane vulcanizate were selected as final candidates for lens substance. Final candidate appears to be Nordel 1320, 100; Cabosil MS-7,3,0; Vul-Cup R, 1.5 and Antioxidant 330, 0.5 parts by weight. Loctite 420 was chosen as adhesive for the lens to the faceblank. Photos of the molds and of assembling operations for the two-piece mask are given.

AD-B039 142/5 PC **A02**/MF **A01**
Naval Submarine Medical Research Lab., Groton, CT.
The Effects of Earplugs and Earmuffs on Pitch Discrimination in Noise.
Interim rept.,
John E. Kerivan. 2 Feb 79, 15p Rept no. NSMRL-888
Distribution limitation now removed.

Earplugs and earmuffs are often not worn in hazardous noise because of workers' conviction that they do or at least may impair their perception of relatively slight acoustic cues important in troubleshooting. A job sample was arranged of discrimination of a + 10% pitch change in an octave band of noise centered either at 500 to 2000 Hz. The signals were embedded in a typical submarine engineroom noise, at each of three S/N ratios. Judgments were made by four trained adults either in an unfiltered (i.e., open-ear) condition or through a multifilter circuit simulating the insertion loss either of a typical earplug or a typical earmuff. S/N was constant across each open-ear vs earplug vs earmuff comparison. Performance was of course degraded at more unfavorable S/N, and was always worse at 2000 Hz. Primarily, performance was always worse for the earplug than for the open-ear condition, and still worse (by up to 25%) for the earmuff condition. It is clear that for this particular job sample the wearing of plugs, and especially of muffs, does indeed distort the spectra cues upon which excellent performance depends.

DOE/EV/10360-1 PC **A02**/MF **A01**
Chicago Univ., IL.
Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
J. D. Rowley. Sep 80, 19p
Contract AC02-80EV10360

The relationship of the chromosome pattern in leukemic cells to prior disease and to the type of therapy are summarized. Although the karyotype seen in secondary ANLL is distinctly different from that seen in the primary malignancy, the nature of the primary disease may influence the pattern of karyotypic changes seen in the leukemic cell. This notion is very speculative and is based on limited observations. Two of three patients with leukemia following multiple myeloma were unique in that they were the only ones whose leukemic cells had more than 48 chromosomes, with +1, +6, +8, +21; this constellation of abnormalities was not seen in any of the other patients. Since most of the patients had received both radiotherapy and chemotherapy, it is difficult to determine whether specific chromosome changes are related more closely to one rather than the other of these types of therapy. It appears, however, that combined therapy is much more likely to result in abnormalities of both No. 5 and No. 7 (9/15 patients) than is either modality used alone (1/12). (ERA citation 05:038833)

6R. Radiobiology

AD-A092 107/2 PC **A02**/MF **A01**
Defence Research Establishment Ottawa (Ontario).
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
Technical note,
C. Ross Hirning, and L. Patrick Rushton. May 80, 23p Rept no. DREO-TN-80-20
Abstract in French.

A system for the measurement of neutron tissue does or kerma has been assembled and tested. The dosimeter is a tissue-equivalent ionization chamber, of modified commercial design. It is enclosed in an airtight aluminum shell, which can be filled with tissue-equivalent gas and sealed, thereby eliminating the need for continuous gas flow. Ionization current can be measured using either a commercial electrometer or a DREO-constructed electrometer. The latter instrument enables the readout device to be located far from the dosimeter without an increase in the leakage current. Calibration theory and procedures are described, and correction factors discussed. (Author)

AD-A092 466/2 PC **A02**/MF **A01**
School of Aerospace Medicine, Brooks AFB, TX.
Retinal Thermal Injury,
Ralph G. Allen. 1980, 10p Rept no. SAM-TR-79-454

Pub. in Proceedings of the Society of Photo-Optical Instrumentation Engineers, v229. Ocular Effects of Non-ionizing Radiation, p80-86 1980.

No abstract available.

AD-A092 487/8 PC **A02**/MF **A01**
Naval Medical Research Unit No. 3, FPO New York 09527.
The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
Technical scientific rept.,
Galila M. Khalil, and Reda M. Abdu. 1979, 7p
Rept nos. NAMRU-3-TR-22/80, NAMRU-3-ACC-1198
Pub. in Jnl. of Medical Entomology, v16 n4 p339-342, 7 Nov 79.

No abstract available.

AD-A950 102/4 Not available NTIS
Naval Research Lab., Washington, DC.
Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters,
J. H. Schulman, R. J. Ginther, S. G. Gorbics, A. E. Nash, and E. J. West. 30 Dec 68, 7p Rept no. NRL-REPRINT-3862
Availability: Pub. in The International Jnl. of Applied Radiation and Isotopes, v20 p523-529 1969 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-B951 740/0 PC **A02**/MF **A01**
General Electric Co., Santa Barbara, CA. TEMPO.
Operation PLUMBBOB. Project 2.9. Nuclear Radiation Received by Aircrews Firing the MB-1 Rocket.
1 Oct 79, 13p DOE-WT-1418(EX)
Contract DNA001-79-C-0455
Extracted version of report dated 27 May 59, AD-357 976L.
Distribution limitation now removed.

The objective of this project was to measure the total neutron + gamma dosages received by an aircrew delivering the MB-1 rocket an altitude of 19,000 feet MSL. As a secondary objective, the same type measurements were made at locations other than the crew compartment and on other aircraft in the delivery array. Neutron and gamma radiation dosages received by the crew members were less than had been predicted. To some extent this may be attributed to the effect of aircraft shielding, which was not utilized in the theoretical predictions. The experiment proved that the MB-1 air-to-air rocket can be successfully launched by the F-89 aircraft at 19,000 feet MSL with a radiation dose to the delivery crew within acceptable limits. (Author)

AD-B951 741/8 PC **A02**/MF **A01**
General Electric Co., Santa Barbara, CA. TEMPO.
Operation PLUMBBOB. Project 39.1b. Neutron Dosimetry by the Threshold-Detector Technique.
Rept. for May-Oct 57.
1 Oct 79, 15p DOE-WT-1471(EX)
Contract DNA001-79-C-0455
Extracted version of report dated 29 May 59.
Distribution limitation now removed.

This report describes neutron-flux and dose determinations made in Operation Plumbbob with the Hurst threshold-detector technique. The measurements were made by personnel engaged in work on Civil Effects Test Group (CETG) Project 39.5 for other projects in the CETG program. (Author)

AECL-6206 PC **A04**/MF **A01**
Atomic Energy of Canada Ltd., Chalk River (Ontario). Chalk River Nuclear Labs.
Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
64p PR-B-117
U.S. Sales Only.

Progress of work in Biology and Health Physics Division is reported for first quarter 1978. Measurements of liquid and plastic scintillator responses over a wide range of gamma-ray energies and calculations of the shape of the Compton electron distribution have been made for different scintillator sizes. Other work performed in health physics included determination of errors involved in accurate determination of dose-equivalents resulting from tritium ingestion, and development of radiation monitors and techniques for using them to best advantage. A wide range of environmental studies were underway during the quarter, notably exp 14 C/ exp 12 C ratio measurement using an accelerator-spectrometer and contiuing studies of the beneficial uses of thermal effluents. Development of computer linkage techniques for medical records continued. Practical applications of the approach include linkage of personal exposure histories with death records pertaining to the exposed individuals. Work in the Biology Branch has continued to focus upon the effects of radiation on a variety of living organisms, ranging from bacterial viruses to humans. The principal sensitive target for long-term biological effects of radiation on all living organisms is DNA. The chemical nature of the damage caused in DNA by radiation and the response of cells to this damage is being studied by a variety of biochemical and genetictechniques. A review of literature on the causes of cancer in humans has continued. If effects are linearly related to total dose, as is normally assumed for purposes of radiation protection, then the total number of fatal cancers predicted to arise from the use of nuclear power in the future should be about 100 times less than the number induced by urban air pollution resulting from the combustion of coal and oil to produce the same amount of electricity. (Atomindex citation 11:529190)

DOE/TIC-11273 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
External Dosimetry.
D. C. Kocher. 1980, 50p
Contract W-7405-ENG-26

The concept of a dose-rate conversion factor for external exposure to photons and electrons and its application to the estimation of population dose following routine or accidental releases of radionuclides to the atmosphere were discussed. Dose-rate conversion factors are useful for exposure situations in which the radionuclide concentration is uniform within a certain distance of the exposed individuals. This distance is approximately equal to the electron range or to three photon mean-free-paths for the medium, which is usually air. If this approximation is valid, the external dose rate is obtained by multiplying the known radionuclide concentration in the environment by the dose-rate factors for the organs of interest for the particular radionuclides. These dose-rate factors are available in published compilations. A brief discussion is given of calculations of external dose for photons for exposure situations in which the radionuclide concentration is not uniform and infinite in extent. Such calculations are based on the concept of the point-isotropic specific absorbed fraction. Although computer codes are generally available for this purpose, these situations may require special treatment on a case-by-case basis. Corrections to calculated external dose rates to account for building shielding during indoor residence, ground roughness and terrain irregularities, and penetration of radionuclides into the ground are also discussed. These effects are usually important in realistic population dose assessments. (ERA citation 05:038841)

SAND-80-2148C PC **A02**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Radiation Protection: An Analysis of Thyroid Blocking.
D. C. Aldrich, and R. M. Blond. 1980, 14p CONF-801056-5, IAEA-CN-39/102
Contract AC04-76DP00789
International conference on current nuclear power plant safety issues, Stockholm, Sweden, 26 Oct 1980.

An analysis was performed to provide guidance to policymakers concerning the effectiveness of potassium iodide (KI) as a thyroid blocking agent in potential reactor accident situations, the distance to which (or area within which) it should be distributed, and its relative effectiveness compared to other available protective measures. The analysis was performed using the Reactor Safety Study (WASH-1400) consequence model. Four categories of accidents were addressed: gap activity release accident (GAP), GAP without containment isolation, core melt with a melt-through release, and core melt with an atmospheric release. Cost-benefit ratios (US $/thyroid nodule prevented) are given assuming that no other protective measures are taken. Uncertainties due to health effects parameters, accident probabilities, and costs are assessed. The effects of other potential protective measures, such as evacuation and sheltering, and the impact on children (critical population) are evaluated. Finally, risk-benefit considerations are briefly discussed. (ERA citation 05:038842)

6S. Stress Physiology

AD-A092 288/0 PC **A03**/MF **A01**
Army Research Inst. of Environmental Medicine, Natick, MA.
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
R. W. Hubbard, M. Mager, W. D. Bowers, I. Leav, and G. Angoff. 27 Jun 80, 35p Rept no. USARIEM-M-32/80

A total of 182 male Sprague-Dawley rats weighting between 250-300 g were fed either a control (n=60) or low-potassium (n=122) diet for 32 days. The diets contained either 125 or 8 mEq potassium per kg, respectively. Rats fed the low k+ diet gained weight at only one third the rate of controls (1.7 vs 5.2 g/d) and their skeletal muscle and plasma potassium levels were reduced by 28 and 47%, respectively. When run to exhaustion at either 15 or 20 C, low K+ fed rats accomplished less than one-half of the work done by the controls (26 vs 53 Kg M) but exhibited a markedly greater rate of heat gain per kg M of work than controls (0.12 vs 0.05 C). However, there were no differences in susceptibility to heatstroke mortality (LD50 = 41.3 + or - 0.1 C for both groups). Post-exercise increases in circulating potassium (>90%) of heat-injured rats raised the plasma levels of low K+ fed rats to normal (5.9 + or - 2.2 mEq/L). Heart lesions (90% incidence) but not kidney lesions were induced by low K+ feeding. Control rats exercised to exhaustion exhibited clinical and histological evidence of a hierarchy of tissue injury (liver>heart>skeletal muscle) consistent with exertion-induced heatstroke. (Author)

AD-A092 360/7 PC **A02**/MF **A01**
Army Research Inst. of Environmental Medicine, Natick, MA.
Sex Differences in Acclimation to a Hot-Dry Environment,
Yair Shapiro, Kent B. Pandolf, and Ralph F. Goldman. 1980, 21p Rept no. USARIEM-M-19/80

Sex-related differences in acclimation to a hot-dry environment were evaluated in 10 males and 9 females. The subjects were exposed during early spring to a hot-dry climate: 49 C, 20% rh for 6 consecutive days. Exposure lasted 120 min: 10 min rest, 50 min walk, 10 min rest, 50 min walk. Heart rate (HR), rectal temperature (T(re)) mean skin temperature (T(sk)), and heat storage dropped significantly for both sexes ($P < 0.05$), from the 1st to the 6th day with no significant changes ($P > 0.05$) between the last two days. In spite of similar metabolism, similar sweat rate and lower heat gain by radiation and convection for the females, their T(re) and T(sk) remained significantly higher ($P < 0.05$) than those of the males at the end of acclimation. It was suggested that the thermoregulatory set-point is higher for unacclimatized women than for men; this difference does not abolish with acclimation.

AD-A092 361/5 PC **A02**/MF **A01**
Army Research Inst. of Environmental Medicine, Natick, MA.
Prediction of Energy Expenditure during Load Carriage at High Altitude,
A. Cymerman, Kent B. Pandolf, A. J. Young, and J. T. Maher. 1980, 20p Rept no. USARIEM-M-29/80

To determine the applicability of a prediction equation at high altitude (HA) for energy expenditure

during load carriage that was previously validated at sea level, oxygen uptake (VO2) was determined in 5 young men at 4300 m while they walked with backpack loads of 0,15 and 30 kg at treadmill grades of 0,8 and 16% at 2.5 mph for 10 min. There were no significant differences in daily VO2 at any specific exercise intensity on days 1,5 and 9 of exposure nor were there any differences in endurance times at the 2 most difficult exercise intensities. Endurance times for 15 and 30 kg loads at 16% grade were 7.3 and 4.2 min, respectively. Measured energy expenditure was compared to that predicted by the formula of Pandolf et al. (J. Appl. Physiol. 43: 577-581, 1977) and found to be significantly different. The differences could be attributed to measurements at metabolic rates exceeding 730 W. These data indicate that the prediction equation can be used at altitude for exercise intensities not exceeding this upper limit. The observed deviations from predicted values at the high exercise intensities could possibly be attributed to the occurrence of appreciable O2 deficits and the inability to achieve steadstate conditions.

AD-A092 368/0 PC **A05**/MF **A01**
Defence and Civil Inst of Environmental Medicine, Downsview (Ontario).
Air Saturation Dive 4 - 8 February 1980, CEDD Test Number 1-80.
Technical communication.
Sep 80, 80p Rept no. DCIEM-80-C-31

The Diving Division in conjunction with the Biosciences Division will carry out an air saturation dive in the Diving Research Facility, DCIEM commencing 4 Feb 80 and concluding 8 Feb 80. This dive will necessitate a pre-dive work-up period from 14 Jan - 4 Feb 80 and a post-dive clean-up period from 8-15 Feb 80. The aim of this exercise is to conduct a 15.3 msw saturation dive with an excursion to 34 msw. The objectives of this dive are as follows: (a) to acquire operational experience in saturation diving; (b) to test and evaluate two diver life-support systems and three physiological monitoring systems under hyperbaric conditions; and (c) to collect physiological data to measure man's capability to perform underwater work.

AD-A092 451/4 PC **A06**/MF **A01**
Undersea Medical Society, Inc., Bethesda, MD.
Interaction of Drugs in the Hyperbaric Environment, Bethesda, Maryland, 13-14 September 1979. The Undersea Medical Workshop (21st),
J. Michael Walsh. 1 Oct 80, 109p Rept no. UMS-PUB-21(DR)
Contract N00014-79-M-0056

Contents: Interactions Between Hyperbaric Pressure and Drugs on Excitable Cells (Nerve and Muscle), Drugs and Diving, Behavioral Effects of Drugs in the Hyperbaric Environment, Discussion of Case Histories Involving Problems with Drug Reactions in Divers or in Hyperbaric Therapy, The Use of Drugs Under Pressure, Anesthesia at High Pressures, Anesthesia Under High Pressure, Drugs in the Hyperbaric Environment.

PB81-129710 PC **A04**/MF **A01**
Statens Vaeg- och Trafikinstitut, Linkoeping (Sweden).
Vaegojaemnheters Inverkan pa Bilfoerares Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
Peter W. Arnberg, and Gert Astroem. 1979, 70p
VTI-181
Text in Swedish. Abstract and Summary in Swedish and English. Also pub. as ISSN-0347-6030.

A literature study has been carried out concerning the effects of vibration on man. The results show that vibration resulting from road roughness could very well have a negative effect on the driver's performance and alertness. A simulation experiment in a film simulator has also been carried out in which 30 male and female subjects were exposed to vibrations of varying frequency and amplitude similar to those experienced on an actual road (what man stands 2 hours according to ISO 2631 whole body vibration standard without performance deficiency).

6T. Toxicology

AD-A091 914/2 PC **A19**/MF **A01**
Range Commanders Council, White Sands Missile Range, NM. Optical Systems Group.
The Toxicity of Photographic Chemicals.
Final rept.
Oct 80, 442p Rept no. RCC/OSG-102-80
Supersedes report dated 22 Oct 57, AD-253 397.

This document was written by the Optical Systems Group (OSG) of the Range Commanders Council (RCC) to promote safe working conditions in photographic laboratories and to provide a comprehensive source of information pertinent to the toxicity of photographic chemicals. It includes safe handling techniques and information aimed at making laboratory technicians and managers aware of the importance of maintaining a hazard free work environment. The Toxicity of Photographic Chemicals is published in loose-leaf format to make future updates easy. When new chemicals or solutions are introduced by the photoprocessing industry, they will be added to the document's existing appendix. Currently the appendix is in two parts: 'Eastman Kodak Safe Handling Considerations' (including Eastman Kodak Material Safety Data Sheets) and 'Ilford Chemicals.'

AD-A092 249/2 PC **A03**/MF **A01**
Ohio State Univ. Research Foundation, Columbus.
Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
Final rept. 1 Sep 79-31 Aug 80,
Donald T. Witiak. Sep 80, 29p AFOSR-TR-80-1174
Grant AFOSR-79-0129

Metabolic activation of methylhydrazines (MMH, DMH) was studied in cultured human fibroblast cell medium. Binding of DMH and MMH to both cell DNA and protein was observed and quantitated by using radioactive 14C-methylhydrazines. The cellular binding study will help us to understand the differences in toxicity or carcinogenicity of the various alkyl hydrazines. Synthesis of 14C-MMH was completed and 14C-UDMH will by synthesized during the second year. Alkylated DNA was hydrolyzed by using hydrochloric acid to the bases and the latter were separated by using HPLC. For MMH and DMH which were non-transformers of human cells, most of the binding was found to be at the phosphodiester oxygens. The binding to the bases was either low (DMH) or absent (MMH). It is hypothesized that the alkylation of phosphodiesters might contribute to the toxicity of these chemicals whereas the alkylation of bases, especially at the 0-6 position of guanine, might contribute to their carcinogenicity. Further investigations with 14C-UDMH will, hopefully, substantiate this hypothesis and studies are in progress towards this goal. (Author)

AD-A092 268/2 PC **A04**/MF **A01**
Federal Aviation Administration, Washington, DC. Office of Aviation Medicine.
Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
E. A. Higgins, M. T. Lategola, C. E. Melton, and J. A. Vaughan. Mar 80, 54p Rept no. FAA-AM-80-9

This study was undertaken to determine the effects of 0.30 ppmv ozone on 40 men representative of airline pilots. All were medically fit; 20 were smokers and 20 were nonsmokers. Subjects were divided into two age groups, 40-49 years and 50-59 years. The experiments consisted of exposure to 0.30 ppmv ozone and, on another occasion, to air only for 3 h at a simulated altitude of 6,000 ft mean sea level. Subjects were sedentary throughout the experiment. Ozone had no effect on heart rate and short-term memory. The group showed a statistically significant incidence of symptoms related to ozone exposure; most were shown by the 40- to 49- year-old nonsmoking group while at altitude and postaltitude, and in smokers in the 50- to 59-year age group only at altitude. Eye irritation was the commonest symptom, followed by headache, nasal irritation, and throat irritation. Data showed significant effects of ozone on forced expiratory volume, 1-second forced expiratory volume, and forced end-expiratory flow. The pulmonary effect of ozone appears to be principally on the small airways. Impairment of visual accommodation was associated with ozone. Dark adaptation threshold was elevated in ozone in the 50- to 59-year nonsmoking age group. Retinal bleach recovery time was retarded and blink rate was higher during ozone exposure. It is concluded that 0.30 ppmv ozone is near threshold for adverse effects of ozone. The data are also applicable to passengers who fit into the same category as these sedentary subjects. (Author)

AD-A092 453/0 PC **A03**/MF **A01**
Air Force Occupational and Environmental Health Lab., Brooks AFB, TX.
Control, Decontamination and Disposal of Mercury.
Final rept.,
Willie M. Webb. Nov 79, 30p Rept no. OEHL-79-149

Practical procedures are presented for the control, decontamination and disposal of mercury. The physical and chemical characteristics of mercury and the most feasible cleanup procedures are discussed. Shortcomings and detailed procedures for using the calcium polysulfide method of decontamination are described. Problems involved in the decontamination of carpeting are presented. The toxicity and monitoring procedures relating to mercury are covered, along with first aid treatment. (Author)

AD-B042 976/1 PC **A02**/MF **A01**
Army Environmental Hygiene Agency, Aberdeen Proving Ground, MD.
Physiological and Pharmacological Effects Following Oral Administration of Monopropellants, August 1978-September 1979.
Final rept. on phase 1,
Leroy W. Metker , Sandra A. Thomson , and Allen W. Singer. 21 Dec 79, 14p Rept no. USAEHA-75-51-0132-80
Distribution limitation now removed.

Physiological and pharmacological testing of LGP-1845 and LGP-1776 was conducted in anesthetized beagle dogs. Toxicity of the two orally administered monopropellants appears to be due to te formation of methemoglobin in the blood. The high nitrate composition of these compounds apparently results in the in vivo conversion to nitrites and subsequent methemoglobin poisoning. Standard treatment utilizing methylene blue and supportive therapy are indicated in the event of accidental poisoning with this material. (Author)

DOE/EV/10100-02 PC **A02**/MF **A01**
American Cancer Research Center and Hospital, Lakewood, CO. Dept. of Basic Oncology.
Study of the Mechanism of Carcinogenesis by Carcinogens Which Are Negative in the Ames Test. Progress Report.
E. Borek. 4p
Contract AC02-79EV10100

Research progress for 1980 is reported. The role of tRNA methyltransferases in two-1 stage carcinogenesis of mice by phorbol esters has been investigated. The mechanisms of elevation of progesterone levels in the rat by ethionine have also beed studied. (ERA citation 06:001412)

DOE/MC/11284-T2 PC **A02**/MF **A01**
West Virginia Univ., Morgantown. Dept. of Anatomy.
Effects of Effluents of Coal Combustion and Gasification Upon Lung Structure and Function. Annual Report.
D. E. Hinton. 1980, 10p
Contract AT21-79MC11284

The overall objective of the proposed research is to correlate both structural and functional alterations in cells and tissues of the lung brought about by exposure to fluidized bed combustion and fixed bed gasification effluents and reagent grade oxides of metals known to be associated with coal combustion gasification. Projected milestones are described. Progress during the first year in setting up aerosol exposure facilities, intratracheal instillations, pulmonary mechanics, and morphometric

examinations is reported. (ERA citation 06:001411)

PB81-122731 PC **A02**/MF **A01**
Environmental Research Lab., Gulf Breeze, FL.
Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
Journal article,
Stanton J. Erickson, and Cynthia E. Hawkins.
c1980, 8p EPA-600/J-80-080, ERL-GB-J830
Pub. in Bulletin of Environmental Contamination and Toxicology, v24 p910-915 1980.

Chlorine oxidants (chlorine gas, sodium hypochlorite, and calcium hypochlorite) are used as biocides to control fouling in seawater cooled power generating plants and to kill pathogens in sewage effluents entering estuarine waters. The effects of chlorinated by-products on estuarine phytoplankton are not known. Experiments reported in this study examine singly the effects of 15 commercially available compounds on photosynthesis by estuarine phytoplankton.

PB81-122749 Naot available NTIS
Environmental Research Lab., Gulf Breeze, FL.
Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
Journal article,
C. G. Bookhout, J. D. Costlow, Jr., and R. Monroe. c1980, 21p EPA-600/J-80-095
Grant EPA-R-803838
Pub. in Water, Air, and Soil Pollution 13, p57-77 1980.

Laboratory experiments were conducted to determine the effects of Kepone on the larval development of the mud-crab, Rhithropanopeus harrisii, and the commercial blue crab, Callinectes sapidus, from the time of hatching until the 1st crab stage was reached. Differential survival of R. harrisii from hatching to 1st crab stage occurred in a range of 35 to 125 ppb Kepone, whereas differential survival of C. sapidus over the same period of development occurred in a range of 0.1 to 1.0 ppb. Statistical analysis indicated that, for every 10 ppb Kepone added, duration from hatching to 1st crab stage of R. harrisii was increased by 0.391 plus or minus 0.043 days; whereas for each increase of 0.1 ppb, the duration from hatching to 1st crab stage of C. sapidus is prolonged by 0.38 plus or minus 0.10 days. The 1st and 2nd zoeal stages of R. harrisii were the most sensitive developmental stages to Kepone, but the 1st zoeal stage of C. sapidus was not sensitive, statistically, to any concentration of Kepone tested. In zoeal stage of C. sapidus was not sensitive, statistically, to any concentration of Kepone tested. In zoeal stages II, III and IV, there were significant increases in mortality of C. sapidus over the previous stage in all media tested.

PB81-126559 PC **A02**/MF **A01**
Environmental Research Lab., Gulf Breeze, FL.
Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
Journal article,
Douglas P. Middaugh, Louis E. Burnett, and John A. Couch. Jun 80, 13p EPA-600/J-80-094, CONTRIB-378
Pub. in Estuaries, v3 n2 p132-141 Jun 80. Prepared in cooperation with Belle W. Baruch Inst. for Marine Biology and Coastal Research, Columbia, SC.

The sublethal and lethal effects of chlorine produced oxidants (CPO) on juveniles of the estuarine teleost, Leiostomus xanthurus, were investigated in flowing water tests conducted at 30 plus or minus 1C and 26 to 31% salinity. Short-term LT50 tests were conducted at two nominal concentrations of NaOCl 1.0 and 1.4 mg/l (respective measured CPO concentrations 0.09 and 0.12 mg/l) which were sublethal in 2,880 minute exposures; and three nominal concentrations, 1.6, 1.8, and 3.2 mg/l NaOCl (respective measured CPO concentrations 0.13 and 0.37 mg/l) which were acutely toxic. Opercular ventilation rates in exposed spot were much higher than in control fish, but returned to rates only slightly above those of controls during the latter portion of the 2,880 minute exposure of the two sublethal CPO concentrations. Opercular rates at the three acutely toxic CPO concentrations remained much higher than control rates until the exposed fish died. Oxygen uptake by spot was depressed at all the measured concentrations of CPO tested. Histopathological examinations showed that gill respiratory ephithelial tissues sloghed away from the underlying pillar cells. Complete denudation of circulatory tissues and hemangiectic secondary lamellae were observed in gill tissues from fish exposed to the highest CPO concentrations of 0.37 mg/l.

PB81-126609 PC **A02**/MF **A01**
Environmental Research Lab., Gulf Breeze, FL.
Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
Journal article,
Jim C. Spain, P. H. Pritchard, and A. W. Bourquin. Oct 80, 11p EPA-600/J-80-007, CONTRIB-410
Pub. in Applied and Environmental Microbiology, v40 n4 p726-734 Oct 80.

Experiments were devised to determine whether exposure to xenobiotics would cause microbial populations to degrade the compounds more rapidly during subsequent exposures. Studies were done with water/sediment systems (eco-cores) taken from a salt marsh and a river. Systems were tested for adaptation to the model compounds methyl parathion and p-nitrophenol. 14CO2 released from radioactive parent compounds was used as a measure of mineralization. River populations pre-exposed to p-nitrophenol at concentrations as low as 60 micrograms/l degraded the nitrophenol much faster than control populations. River populations pre-exposed to methyl parathion also adapted to degrade the pesticides more rapidly, but higher concentrations were required. Salt marsh populations did not adapt to degrade methyl parathion. p-Nitrophenol-degrading bacteria were isolated from river samples, but not from salt marsh samples. Numbers of nitrophenol-degrading bacteria increased 4 to 5 orders of magnitude during adaptation. Results indicate that the ability of populations to adapt depends on the presence of specific microorganisms. Biodegradation rates in laboratory systems can be affected by concentration and prior exposure; therefore, adaptation must be considered when such systems are used to predict the fate of xenobiotics in the environment.

PB81-127532 PC **A05**/MF **A01**
Maryland Univ., College Park. Water Resources Research Center.
Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
Technical rept.,
Lore A. McNicol. Oct 80, 87p TR-58, W81-00508, OWRT-A-048-MD
Contract DI-14-34-0001-9022

Antibiotic-resistant and heavy metal-resident phenotypic frequency was measured in Chesapeake Bay bacterial strains obtained from Bay sites differing significantly in water quality. The phenotypes were estimated from dose-response curves using direct plating, replica plating, and minimal inhibitory concentration (MIC). Resistant and sensitive organisms could be distinguished by concentrations of twenty micrograms per milliliter for various antibiotics (ampicillin, chloramphenicol, nalidixic acid, penicillin, streptomycin, and tetracycline), and of 0.05 millimolar for the heavy metals tested (cadmium, mercury, nickel, and lead). Individual resistance phenotypes of 1816 isolates were determined with the replica technique, with 85% resistant to at least one antibiotic and a surprising 2% resistant to all six drugs tested. Occurrence of resistant organisms did not correlate with water quality, sampling location, season, sample type, or physical parameters of the site. Ninety-two percent of organisms examined were resistant to at least one metal studied, with 43% resistant to all metals, but resistance did not correlate with any station or sample parameters. Metal and drug resistant phenotypes did correlate positively with one another, but these two traits were not appreciably linked on plasmid DNA.

PB81-128167 PC **A06**/MF **A01**
Science Research Systems, Inc., Ruston, LA.
Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
Final rept.,
Kenny S. Crump, and Harry A. Guess. Dec 80, 106p
Contract EQ10AC018

An assessment of evidence of cancer risks to humans from organic contaminants in drinking water: (1) review of epidemiological literature with emphasis upon case control studies, (2) use of animal data to estimate the carcinogenic potencies of synthetic organic chemicals found recently as contaminants of drinking water from some ground water sources, and (3) discussion of needed research.

PB81-132037 PC **A02**/MF **A01**
Environmental Research Lab.-Duluth, Cincinnati, OH. Newtown Fish Toxicology Station.
Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
Journal article,
Q. H. Pickering. 1980, 11p EPA-600/J-80-194
Pub. in Archives of Environmental Contamination and Toxicology 9, p405-413 1980.

The chronic effects of hexavalent chromium on the fathead minnow (Pimephales promelas) were investigated. Survival was affected only at the high test concentration of 3.95 mg Cr/L. All chromium concentrations, including 0.018 mg/L, the lowest tested, retarded the early growth of first-generation fish, but this effect was only temporary. Growth of second-generation fish was not affected at concentrations of 1.0 mg/L or lower. Reproduction and hatchability of eggs were not affected at any chromium concentration tested. The maximum acceptable toxicant concentration (MATC) for fathead minnows in hard water (209 mg/L as CaCO3 at pH 7.7) was based on survival and lies between 1.0 and 3.95 mg Cr/L, respectively. The application factor (MATC/96-hr LC50) is between 0.03 and 0.11.

PB81-139339 PC **A03**/MF **A01**
International Research and Development Corp., Mattawan, MI.
Acute Oral Toxicity Studies in Rats and Rabbits.
R. G. Geil, and W. P. Dean. 29 Jan 76, 32p
HUD-0001560
Contract HUD-H-2281

Acute oral toxicity studies were conducted with denatonium benzoate in adult male and female albino rats, neonatal albino rats, and adult male and female rabbits. The test compound was administered orally to adult albino rats at dosage levels of 127.1, 201.7, 320.2, 508.4, 807, and 1.281 mg / kg; to neonatal rats (undifferentiated as to sex) at dosage levels of 7.9, 12.5, 19.8, 31.5, 50.0, 79.4, 125, and 315 mg / kg; and orally to albino rabbits at dosage levels of 201.7, 320.2, 508.4, 807, and 1.1281 mg / kg. Five male and five female rats and two male and two female rabbits were used at each dosage level in the adult studies. Ten neonatal rates (undifferentiated as to sex) were used in the neonatal study. Observations for pharmacodynamic signs and mortality were made frequently on the day of compound administration and daily thereafter for a total of 14 days. A summary of the pharmacodynamic signs and mortalities obtained in each of the studies is presented in the text. Based upon the results obtained, the acute oral toxicity values for denatonium benzoate in adult albino rats, neonatal albino rats, and adult albino rabbits were calculated to be as follows: acute oral toxicity in albino rats was 640 (554 - 740) mg / kg; in female rate 584 (485 - 702) mg / kg; and in combined male and female albino rats, it was 612 (558 - 671) mg / kg. Acute oral toxicity in neonatal albino rats was 23 (19 - 27) mg / kg. In albino rabbits, the acute oral toxicity was as follows: in males, 508 (202 - 1281) mg / kg; in females, 640 (508 - 807) mg / kg; and in combined male and female rabbits, 593 (483 - 728) mg / kg. Data tables are provided, and one statistical reference is given. (Author abstract modified).

PB81-139347 PC **A05**/MF **A01**
International Research and Development Corp., Mattawan, MI.

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two Year Oral Toxicity Study in Rats. Report Number 2E.
31 May 77, 89p HUD-0001561
Contract HUD-H-2281

The objective of this study was to determine the acute and chronic toxicity of denatonium benzoate, an acerbic ingredient proposed for use in bad - tasting paint to prevent paint pica. In a 2 - year study in Charles River CD rats, denatonium benzoate has been administered by gavage at dosage levels of 1.6, 8, and 16 mg / kg / day for 78 weeks. A total of 65 male and 65 female rats were initiated at each dosage level and also as a control group. The rats were observed daily for changes in general behavior and appearance, and detailed observations were recorded weekly. Individual body weights and sex group food consumptions were measured daily for the first 5 weeks of study and weekly thereafter. Hematological, biochemical, and urinalysis studies were scheduled for 3, 6, 12, 18, and 24 months of study. Ophthalmoscopic examinations were made on all rats during the control period and were performed again at the same time intervals as for hematology, biochemistry, and urinalysis. No changes considered to be related to the compound were seen in general behavior and appearance, ophthalmoscopy, body weights, food consumption and efficiency, biochemical studies, or urinalyses. Coagulation times of denatonium benzoate - dosed rats were slightly higher than those of control rats at 18 months of study. No compound - related gross pathologic lesions were observed in rats from the experimental groups which were sacrificed after 18 months. Other experimental observations and results also are discussed. Data tables are provided. An appendix gives the results of ophthalmoscopic examination. (Author abstract modified).

PB81-139354 PC **A16**/MF **A01**
International Research and Development Corp., Mattawan, MI.
Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two year Oral Toxicity Study in Rats. Report Number 2F.
22 Nov 78, 365p HUD-0001562
Contract HUD-H-2281

The objective of this rat study was to determine the acute and chronic toxicity of denatonium benzoate, an acerbic ingredient proposed for use in bad - tasting paint to prevent paint pica. In a 2 - year study in Charles River CD rats, denatonium benzoate was administered by gavage at dosage levels of 1.6, 8, and 16 mg / kg / day. A total of 65 male and 65 female rats were initiated at each dosage level and also in a control group. The rats were observed daily for overt signs of toxicity and mortality, and detailed observations were recorded weekly. Individual body weights and sex group food consumption were measured daily for the first 5 weeks of study and weekly therafter. Hematological, biochemical, and urinalysis studies were conducted at 3, 6, 12, 18, and 24 months of study. Ophthalmoscopic examinations were performed for all rats during the control period and at 3, 6, 12, 18 and 24 months of study. No changes considered to be related to the compound were observed in general behavior and appearance, ophthalmoscopy, body weights, food consumption and efficiency, hematological, biochemical, and urinalysis studies or survival. No compound - related gross or microscopic pathologic lesions or variations in organ weights were observed in the experimental rats. Footnotes, 46 tables, and an appendix of results of ophthalmoscopic examinations are included. (Author abstract modified).

PB81-139362 PC **A21**/MF **A01**
International Research and Development Corp., Mattawan, MI.
Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. One Year Oral Toxicity Study in Monkeys. Report Number 3E.
02 Mar 77, 477p HUD-0001563
Contract HUD-H-2281

The objective of this cynomolgus monkey study was to determine the acute and chronic toxicity of denatonium benzoate, an acerbic ingredient proposed for use in bad - tasting paint to prevent paint pica. In a 1 - year toxicity study in cynomolgus monkeys, denatonium benzoate was administered by gavage at dosage levels of 1.6, 8, and 16 mg / kg / day. Eight male and eight female monkeys were initiated at each dosage levels and also as a control group. The monkeys were observed daily for changes in general behavior and appearance and for pharmacotoxic signs. Individual body weights were recorded twice weekly for the first 5 weeks of study and weekly thereafter. Ophthalmoscopy (indirect and slit lamp), electrocardiograms, hematological and biochemical studies, and urinalyses were conducted once in the control period and at 3, 6, and 12 months of study. No changes considered to be related to compound were seen in general behavior and appearance, ophthalmoscopy, electrocardiograms, body weights, hematological and biochemical studies, or urinalyses. One control monkey and a total of eight monkeys at the 1.6, 8 and 16 mg / kg / day dosage levels, at total of eight died during the study. No compound - related gross pathologic or organ-weight variations were observed at necropsy in any of the treated monkeys sacrificed at 3, 6 or 12 months or that died during the course of this study. Deaths of two of the three monkeys from the 8 mg / kg / day level and three of the four monkeys from the 16 mg / kg / day level may have been due to compound effect. Microscopically, no lesion considered compound related was seen in any of the tissues examined from monkeys sacrificed at 3 months at 8 or 16 mg / kg / day level and at 6 or 12 months at 16 mg / kg / day level or in any that died during the course of the study. Data tables and 11 references are given and appendices give results of ophthalmoscopic examinations and electrocardiograms. (Author abstract modified).

7. CHEMISTRY

7A. Chemical Engineering

CONF-801090-3 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
State-of-the-Art Assessments on Critical Coal Conversion Equipment.
B. T. Thompson, Jr. 1980, 30p
Contract W-7405-ENG-26
Critical equipment workshop, Huntington, WV, USA, 1 Oct 1980.

Coal feeding is one of the critical steps common to all coal conversion processes such as gasification, liquefaction and fluidized bed combustion. This is the mechanical means by which coal, at essentially atmospheric pressure, is injected into vessels operating under pressures up to 2000 pounds per square inch and higher. The mechanical goals are challenging. The contnuous dry feeding of a variety of coal sizes and types at flow rates of 50 to 250 tons per hour must be accomplished for demonstration and commercial-size plants. This presentation will examine the current technology as well as some of the more recent developmental efforts, including the DOE-sponsored Dry Coal Feeder Program. (ERA citation 06:000026)

DOE/EIA-0111/79 PC **A03**/MF **A01**
Department of Energy, Washington, DC. Energy Information Administration.
Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
Jun 79, 29p

The number and capacity of petroleum refineries in the United States and U.S. territories (Puerto Rico, Hawaiian Foreign Trade Zone, the Virgin Islands, and Guam) are reported by each of five Bureau of Mines Refining Districts, by each of five Petroleum Administration for Defense (PAD) Districts, and by State, for each of the refining companies within the State, as of January 1. Refinery locations are included. Data are shown for crude oil distillation, cracking, reforming, coking, and alkylation processes. Storage capacity of petroleum refineries is shown separately by PAD District and by State, for crude oil, motor gasoline, jet fuel, middle distillates, and residual fuel oil. The BOM Refining Districts and PAD Districts are each shown on separate map at the end of the report. The report includes a copy of BOM Form 6-1334-A (with instructions) which is used to compile data for this report. Data are in barrels per calendar day. A narrative section of the document explains and highlights table statistics. This annual was formerly titled "Petroleum Refineries in the United States and Puerto Rico," DOE/EIA-0111. 5 tables, 3 figures. (ERA citation 06:000189)

DOE/ET/10104-T4(V.1) PC **A12**/MF **A01**
Pittsburg and Midway Coal Mining Co., Englewood, CO.
Solvent Refined Coal (SRC) Process.
Oct 80, 257p
Contract AC01-76ET10104

This report summarizes the progress of the Solvent Refined Coal (SRC) project for the period January 1, 1979 through December 31, 1979. The fourth quarter of 1979 is reported here in detail. Turnaround activities at the Fort Lewis SRC-II Pilot Plant were completed. During the shutdown, installation of Slurry Preheater B was completed. In addition, extensive modifications were completed to improve operability and slurry handling capabilities. The experimental program for testing Slurry Preheater B was revised to improve the data base for design scale-up considerations. Coal feed was established using Powhatan No. 6 coal. Twenty slurry survey tests were designed to establish the effects of varous slurry and heater inlet hydrogen flow rates on heat transfer, heater coil pressure drop, and heater operability. Additional tests were also added to the preheater evaluation program to study the effects of coal concentration, recycle pyridine insoluble concentration and preheater outlet temperatures. During 1979, PDU P-99 completed 13 runs (Runs 49 to 57 and 59 to 62). All these runs were made feeding coal from the Powhatan No. 5 Mine. (ERA citation 06:000098)

DOE/ET/13046-T72 PC **A07**/MF **A01**
Memphis Light, Gas and Water Div., TN.
Industrial Fuel Gas Demonstration Plant Program. Procurement Schedule for Long-Lead Items (Deliverable No. 48).
1979, 138p
Contract AC02-77ET13046

The long-lead items required for the Industrial Fuel Gas Demonstration Plant are given. Utilizing the Construction Plan (Deliverable No. 37), which is based upon 48 months to the completion of Phase II, the delivery requirements for each equipment item were determined. Required delivery dates were ascertained from the erection sequence for IFG Demonstration Plant units and equipment items. Lead times established by FWEC procurement personnel were then applied to arrive at a date when procurement action must be initiated. Procurement schedules for all equipment items are included in this document. Also evaluated were the activities required prior to actual placement of the order. Appropriate time has been included at the front end for receipt of vendor quotes, evaluation, and the recommendation for award to DOE and DOE approval (if required). The first milestone indicated on these schedules is the issuance of bid packages to prospective vendors. This is the required month to begin procurement activities to maintain the program time table. Six items have been determined to be long-lead time procurement items. The complete engineering, drafting, and procurement schedules for such items can be determined by referring to respective equipment numbers on the enclosed schedules. (ERA citation 06:000064)

DOE/ET/27026-T4 PC **A03**/MF **A01**
Radian Corp., Austin, TX.

Geothermal Materials Survey : Arkansas Power and Light Development and Demonstration Project. 100KW Power System Using Direct Contact Heat Exchangers, El Dorado, Arkansas.
P. F. Ellis, II. 22 Jul 80, 38p
Contract AC02-79ET27026

The 100 kW plant is a direct contact boiling/direct contact condensing binary system using isopentane as the working fluid. Treated waste geothermal brine from the Great Lakes Chemical Co. (GLC) bromine recovery operation is the heat source. Brine is taken from the GLC Treated Brine Line at 205 to 210 exp 0 F and supplied to the pilot plant via the APL Brine Inlet Line. The brine enters the direct contact boiler (DCB) and vaporizes isopentane. The cooled brine is discharged into the reinjection pond at 135 to 155 exp 0 F. The brine flow rate is 45,655 to 87,030 lb(m)/hr (pounds mass per hour). The chemistry of the brine is discussed. The objectives here are to: (1) evaluate present pilot plant materials selections, (2) identify potential materials problems, and (3) recommend alternate materials for use in future systems. (ERA citation 06:000642)

DOE/JPL/954654-80/12 PC **A03**/MF **A01**
Westinghouse Electric Corp., Pittsburgh, PA. Research and Development Center.
Silicon Web Process Development.
C. S. Duncan, R. G. Seidensticker, J. P. McHugh, M. E. Skutch, and R. H. Hopkins. 15 Jul 80, 44p
Contract NAS-7-100-954654

Silicon dendritic web is a ribbon form of silicon produced from the melt without die shaping, and capable of fabrication into solar cells with greater than 15% AM1 conversion efficiency. This quarterly report describes the work carried out during the period April to June 1980, as part of Phase III of a DOE/JPL-sponsored effort to develop silicon web process technology compatible with the national goals for low cost photovoltaic output power. We have successfully demonstrated eight hours of silicon web growth with closed loop melt level control, a key contract milestone. The result was achieved using a feedback system in which the change in output from a laser melt level sensor was used to control the rate at which silicon pellets were fed to replace the material frozen into web crystal. The melt level was controlled to about +- 0.1mm, well within the range required for stable long term web growth. This is an important step toward the development of a fully automated silicon web growth machine. A second major highlight of this quarter was the completion of an engineering design for a semi-automated web growth machine embodying all the desired features developed so far as part of this program (including e.g. melt replenishment, level sensing and control) as well as some system simplifications. The completed design will serve as a basis for complete system automation. (ERA citation 06:000414)

DOE/PC/04717-5 PC **A02**/MF **A01**
Texas A and M Univ., College Station.
Catalytic Conversion of Oxygenated Compounds to Low Molecular Weight Olefins. Progress Report for the Period March 1, 1980 to August 31, 1980.
R. G. Anthony. 30 Sep 80, 12p
Contract AS02-78PC04717

A possible route for producing low molecular weight olefins is to convert synthesis gas to methanol followed by conversion of methanol to olefins in a one-step process. During this report period the reaction apparatus suitable for reaction pressure of 500 psig to 1000 psig was constructed. A preliminary trial run was performed for the reaction of synthesis gas over an intimate mixture of methanol synthesis catalyst and Zeolon-500 (mixture of chabasite and erionite). The reaction temperature, pressure and space velocity were 400 exp 0 C, 800 psig, and 6000 hr exp -1 (STP), respectively. The total carbon monoxide conversions were 15 to 24 percent. The major products were carbon dioxide and paraffins of C sub 1 to C sub 4 . Deactivation of the catalyst occurred after 10 hours. X-ray diffraction patterns of the catalyst occurred after 10 hours. X-ray diffraction patterns of the catalyst shows that crystal structure changed during the reaction, and the catalyst exhibited low crystallinity compared to synthetic erionite. (ERA citation 06:000379)

PAT-APPL-6-100 663 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
Patent Application,
J. L. Loth, W. C. Smith, and G. R. Friggens. Filed 5 Dec 79, 12p
Contract EY-77-C-21-8087
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The present invention is directed to a coal-water slurry atomizer for use in a high-pressure dryer employed in a pumping system utilized to feed coal into a pressurized coal gasifier. The slurry atomizer is provided with a venturi, constant area slurry injection conduit, and a plurality of tangentially disposed steam injection ports. Superheated steam is injected into the atomizer through these ports to provide a vortical flow of the steam, which, in turn, shears slurry emerging from the slurry injection conduit. The droplets of slurry are rapidly dispersed in the dryer through the venturi where the water is vaporized from the slurry by the steam prior to deleterious heating of the coal. (ERA citation 06:001851)

PAT-APPL-6-124 057 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Two Stage Liquefaction of Coal.
Patent Application,
M. B. Neuworth. Filed 25 Feb 80, 23p
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

A two stage coal liquefaction process and apparatus comprising hydrogen donor solvent extracting, solvent deashing, and catalytic hydrocracking are disclosed. Preferably, the catalytic hydrocracking is performed in an ebullating bed hydrocracker. (ERA citation 06:001849)

7B. Inorganic Chemistry

AD-A092 269/0 PC **A04**/MF **A01**
Virginia Univ., Charlottesville. Dept. of Chemistry.
Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
Technical rept.,
David C. Finster, Ekk Sinn, and Russell N. Grimes. Nov 80, 51p Rept no. TR-35
Contract N00014-75-C-0305

The reaction of Li(+) C5(CH3)5(-), CoCl2, and Na(+)(CH3)2C2B4H5(-) in cold THF forms primarily closo-1,2,3-(eta 5-C5(CH3)5)Co(CH3)2C2B4H4 (I), the triple-decker complex 1,7,2,3-(eta 5-C5(CH3)5)2Co2(CH3)2C2B3H3 (II), a structurally novel complex, (eta 5-C5(CH3)5)2Co3(CH3)4C4B8H7 (III), and traces of other products, in a combined isolated yield of about 50%. Complexes I and II are C5(CH3)5 analogues of C5H5-substituted cobalta-carboranes reported earlier, but III has no previous counterpart. An X-ray diffraction study of III disclosed a structure consisting of two identical (eta 5-C5(CH3)5)Co(CH3)2C2B4H3 units face-coordinated to a third cobalt atom, with a direct B-B bond (1.758(5) A) between the two ligands; the linked boron atoms have terminal hydrogen atoms in the solid-state structure. The 'extra' hydrogen atom was not directly located, but its general position was indicated by a 3.5 deg fold in the molecule which creates a larger inter-ligand pocket on one side than the other. Possible mechanisms and stereochemical implications of the structure and fluxional behavior of III are presented. The chemistry of complex I resembles that of its C5H5-substituted counterpart; thus, degradation fo I in basic CH3CN produces nito-1,2,3-(eta 5-C5(CH3)5)Co(CH3)2C2B3H5 in 93% yield.

AD-B040 437/6 PC **A03**/MF **A01**
Naval Ordnance Station, Indian Head, MD.
Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
Technical rept.,
M. C. Hudson, and Robert MacLaren. 31 Aug 79, 38p Rept no. NOS-IHTR-567
Distribution limitation now removed.

In December 1978, a fire occurred in the film storage facility of the National Archives. This report documents the testing conducted to characterize the ignition and combustion of cellulose nitrate film. Areas of concern were film chemical stability, likelihood of ignition from accidental forces, and intensity of reactions. (Author)

7C. Organic Chemistry

AD-A092 270/8 PC **A03**/MF **A01**
Virginia Univ., Charlottesville. Dept. of Chemistry.
Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R=H, CH3) and Related Compounds.
Technical rept.,
David C. Finster, and Russell N. Grimes. Nov 80, 43p Rept no. TR-36
Contract N00014-75-C-0305

Reactions of the nido-cobaltacarborane anions (eta 5-C5H5)Co(CH3)2C2B3H4- and (eta 5-C5(CH3)5)Co(CH3)2C2B3H4(-) with HgCl2 in tetrahydrofuran give initially the unstable adduct ((eta5-C5R5)Co(CH3)2C2B3H4.HgCl2)(-) (R = H, CH3), which lose Cl- to form the isolable HgCl-bridged complexes mu-(eta 5-C5R5)Co(CH3)2C2B3H4)HgC1; the latter species undergo symmetrization to generate the bis(cobaltacarboranyl)mercury complexes mu,mu'-(eta 5-C5R5)Co(CH3)2C2B3H4)2Hg. In the cyclopentadienyl system (R = H), the formation of the mu,mu' complex is rapid, giving high yields within minutes; in contrast, the pentamethylcyclopentadienyl species reacts much more slowly, requiring days to form the mu,mu' complex in isolable quantity. Thus, the characterization of the mono (cobaltacarboranyl)mercury complex is readily achieved with the C5(CH3)5-substituted cobaltacarborane. The structural characterization of the Hg-bridged complexes is based on pulse Fourier transform 1H and 11B NMR, ir, and mass spectra, and single-crystal X-ray diffraction studies of mu-(eta 5-C5(CH3)5)Co(CH3)2C2B3H4-HgC1 and mu,mu'-((eta-C5H5)Co(CH3)2C2B3H4)2Hg. The mono(cobaltacarboranyl) complex crystallizes as a dimer with weak intermolecular Hg...Cl interactions.

PAT-APPL-6-025 157 PC **A02**/MF **A01**
Department of Health, Education, and Welfare, Washington, DC.
Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
Patent Application,
Henryk Dubicki, Jack L. Parsons, and Fred W. Starks. Filed 29 Mar 79, 17p PB81-129637
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The purpose of this invention is to provide a modus for recounting the production of quantities of the compound in preparation for clinical trial for antitumor antileukemic effect and to produce quantities for clinical studies in multiple clinical sites. The invention describes the multi-step process in detail.

PAT-APPL-6-115 411 PC **A02**/MF **A01**
Department of Health, Education, and Welfare, Washington, DC.
Facile Synthesis of Codeine Precursors from Thebaine.
Patent Application,
William G. Dauben, Craig P. Baskin, and Herman C. H. A. vanRiel. Filed 25 Jan 80, 12p PB81-129629
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

Thebaine is converted to a mixture of codeinone and neopinone in aqueous formic acid solution containing as catalyst a mercuric salt. Thebaine is converted to a neopinone ketal by irradiation in an alkanol or to a mixture of neopinone and codeinone in an acidic aqueous solution. Neopinone ketals, codeinone and neopinous can be converted to codeine.

PAT-APPL-6-133 788 PC **A02**/MF **A01**
Department of Health, Education, and Welfare, Washington, DC.
Improved Synthesis of 2,4-Diamino-6-Hydroxymethylpteridine.
Patent Application,
James A. Ellard, and Joseph Satanek, Jr. Filed 25 Mar 80, 6p PB81-129611
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

In a method of preparing methotrexate from a coupling of 2,4-bis(triphenylphosphazino)-6-bromomethyl-pteridine hydrobromide with ethyl N-(p-methylamino)-benzoyl-L-glutamate to produce the phosphazino derivative of methotrexate ester and subsequently hydrolyzing the phosphazino and ester groups to produce the free methotrexate.

PAT-APPL-6-170 570 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
Water Soluble Forms of Retinoids.
Patent Application,
Josef Pitha. Filed 21 Jul 80, 22p PB81-131435
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This invention relates to water soluble Retinoid complexes and a method for their preparation.

PAT-APPL-6-181 465 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
Patent Application,
Leonard M. Hjelmeland. Filed 26 Aug 80, 22p PB81-131484
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

A nondenaturing zwitterionic detergent for proteins which, for example, consists of an effective amount of 3-((3-cholamidopropyl)dimethylammonio)-1-propanesulfonate (CHAPS). This detergent is of extreme interest in the biological study of proteins due to its nondenaturing characteristic.

PATENT-4 181 654
Not available NTIS
Department of Energy, Washington, DC.
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
Patent,
F. L. Weitl, and K. N. Raymond. Filed 24 Jul 78, patented 1 Jan 80, 12p PAT-APPL-927 234
Supersedes PAT-APPL-927 234-78.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

The present compounds are useful as specific sequestering agents for actinide (IV) ions. Also described is a method for the 2,3-dihydroxybenzamidation of azaalkanes. (ERA citation 06:001128)

PATENT-4 222 968
Not available NTIS
Department of the Air Force, Washington, DC.
Method for Synthesizing Fluorocarbon Halides.
Patent,
Carl J. Schack, and Karl O. Christe. Filed 8 Jun 79, patented 16 Sep 80, 4p AD-D007 876/6, PAT-APPL-6-046 898
Supersedes PAT-APPL-6-046 898, AD-D006 218.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

This patent discloses a method for synthesizing fluorocarbon halides by effecting a reaction at ambient temperatures between a fluorocarbon acid or its derivative and a halogen fluorosulfate.

PATENT-4 225 512
Not available NTIS
Department of Agriculture, Washington, DC.
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
Patent,
Arlen W. Frank, Donald J. Daigle, and Russell M. H. Kullman. Filed 26 Jul 79, patented 30 Sep 80, 6p PB81-129371, PAT-APPL-6-061 169
Supersedes PB80-100985.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

Novel ternary salts of tris(aminomethyl)phosphines and their oxides having the formula (R2NH(+1)CH2)3 P(O)n3X(-1), wherein R is hydrogen, an alkyl radical having from 1 to 6 carbon atoms or an aryl radical, n is an integer from 0 to 1, and X is a halogen, are prepared by the reaction of a hydrohalic acid, HX, with various nitrogen-and phosphorus-containing compounds including tris(aminomethyl)phosphines and their oxides, tris(N-carbalkoxylaminomethyl)phosphines oxides, and 1,3,5-triaza-7-phosphaadamantane and its 7-oxide.

PATENT-4 228 100
Not available NTIS
Department of Agriculture, Washington, DC.
Quaternary Ureidomethyl Phosphonium Salts.
Patent,
Arlen W. Frank. Filed 6 Apr 79, patented 14 Oct 80, 11p PB81-129397, PAT-APPL-6-027 696
Supersedes PB-297 896.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

Novel quaternary ureidomethyl phosphonium salts are prepared by condensing a urea having the formula RNHC(O)NR'R' with a quaternary hydroxymethyl phosphonium salt having the formula (HOCH2)4P(+1)X(-1) in a molar ratio of at least 2:1. The products, which are characterized by the absence of residual hydroxymethyl groups, are useful as finishing agents for imparting flame retardant properties to cotton fabrics.

PATENT-4 229 566
Not available NTIS
Department of the Air Force, Washington, DC.
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
Patent,
Robert C. Evers, Fred E. Arnold, and Thaddeus E. Helminiak. Filed 24 Aug 79, patented 21 Oct 80, 9p AD-D007 878/2, PAT-APPL-6-069 476
Supersedes PAT-APPL-6-069 476, AD-D006 772.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

Para-ordered aromatic heterocyclic polymers characterized by having p-benzbisoxazole, p-benzbisthiozole or p-benzbisimidazole units and containing diphenoxybenzene structures. The diphenoxybenzene structures function as 'swivels' in the polymer chains, imparting flexibility thereto and making it possible to cast strong films from solutions of the polymers. (Author)

PATENT-4 232 154
Not available NTIS
Department of Health, Education, and Welfare, Washington, DC.
Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
Patent,
Y. Fulmer Shealy, and Allen O'Dell. Filed 17 Jul 79, patented 4 Nov 80, 8p PB81-129363, PAT-APPL-6-058 177
Supersedes PB80-114846.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

Novel compounds are disclosed which are carbocyclic analogs of cytosine nucleosides in which the pentose moiety of the nucleoside is replaced by a cyclopentane ring. The novel compounds exhibit antiviral activity, and certain of them also exhibit antineoplastic activity against the L 1210 mouse leukemia test system.

PB81-125015 PC **A05**/MF **A01**
Oklahoma State Univ., Stillwater. Dept. of Chemistry.
Polynuclear Aromatic Compounds. Synthesis and Purification.
Final rept.,
E. J. Eisenbraun. Dec 80, 100p EPA-600/2-80-204
Grant EPA-R-805419
See also report dated Jan 78, PB-277 469.

The synthesis and/or purification of a group of polynuclear aromatic (PNA) compounds commonly found as pollutants in the environment are reviewed and discussed. Details of the experimental procedures and techniques as well as chromatographic and spectroscopic evidence of structure and purity of the compounds supplied to the U.S. Environmental Protection Agency are presented. In addition, the apparatus designed and constructed to meet the synthesis needs together with safety improvements for handling toxic compounds are described. Publications resulting from this work and manuscripts in preparation are cited.

7D. Physical Chemistry

AD-A091 931/6 PC **A03**/MF **A01**
State Univ. of New York at Buffalo. Dept. of Chemistry.
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
Technical rept.,
Koichi Aoki, and Janet Osteryoung. Oct 80, 43p Rept no. TR-2
Contract N00014-79-C-0644

Rigorous expressions for diffusion-controlled currents at a stationary finite disk electrode are derived through use of the Winer-Hofp technique. The chronoamperometric curve obtained varies smoothly from a curve represented by the Cottrell equation to a steady state value similar to that obtained for a spherical electrode as time elapses. The solution can be expressed also as the Cottrell term multiplied by a power series in the parameter sq. rt (Dt/a), where a is the electrode radius. The present work is discussed in terms of the coefficient of the first term in this formulation. (Author)

AD-A091 936/5 PC **A03**/MF **A01**
Virginia Univ., Charlottesville. Dept. of Chemistry.
Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
Technical rept.,
Richard B. Maynard, Ekk Sinn, and Russell N. Grimes. Nov 80, 28p Rept no. TR-34
Contract N00014-75-C-0305
See also AD-A067 671.

The preferred structure of 12-vertex, 28-electron (nido) polyhedral cages, which contain two skeletal electrons beyond the 26 required for a regular closo icosahedral system, and which have thus far been found in at least 7 different structural classes, was the focus of this investigation. The crystal and molecular structure of the title compound, which was formed by thermal rearrangement of isomer I at 140 C, were determined by single-crystal X-ray diffraction. Isomer III has an open cage geometry in which all four carbon atoms and two borons reside on a 6-membered open face, with one of the carbons isolated from the other three. The cage is isostructural with the

previously characterized metallacarboranes (eta 5-C5H5)Fe(CH3)4C4B7H8 and (eta 5-C5H5)2CO2C4B6H10, isomer VII; however, the structures of the three isomers of (eta 5-C5H5)CO(CH3)4C4B7H7 are grossly different from each other. The observed geometry of isomer III implies a thermodynamic preference of skeletal carbon atoms for low-coordinate vertices on the open rim, even though this requires three of the four carbons to remain adjacent. The adoption of a high-coordinate vertex by cobalt is also significant. The 7 established classes of 12-vertex, 28-electron cage systems are discussed in light of the present study. Crystal data: mol wt 314.9, space group C2/c, Z = 8; a = 25.944(8), b = 8.686(3), c = 15.410(5) A; beta = 108.47(3) deg.; V = 3294 A3; R = 0.052 for 1542 independent reflections having F sub 0 squared > 3 sigma (F sub 0) square. (Author)

AD-A091 958/9 PC **A02**/MF **A01**
Texas Univ. at Austin. Dept. of Chemistry.
On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
Technical rept. 1 Sep 80-31 Aug 81,
Allen J. Bard, Fu-Ren F. Fan, Alberto S. Gioda, G. Nagasubramanian, and Henry S. White. 27 Oct 80, 22p Rept no. TR-13
Contract N00014-78-C-0592

Surface states that occur at the semiconductor-liquid interface play an important role in the behaviour of that interface and affect the efficiency of photoelectrochemical solar devices. The nature of such states and evidence for their existence will be briefly reviewed. Their role in dark electron transfer reactions for redox couples with energies within the band-gap region and in mediating surface recombinations will be discussed. The importance of Fermi level pinning by surface states at moderate densities in GaAs and Si in controlling the open-circuit photovoltage and the observed electrochemical behaviour will be described. The effect of the surface pretreatment on the photoelectrochemical behaviour of p-GaAs and n-WSe2 will be demonstrated. (Author)

AD-A092 061/1 PC **A02**/MF **A01**
Aerodyne Research, Inc., Bedford, MA. Center for Chemical and Environmental Physics.
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
Interim rept.,
Michael B. Faist. May 80, 25p ARI-RR-174, SCIENTIFIC-2, AFGL-TR-80-0049
Contract F19628-78-C-0145

An information theoretic approach is used to calculate the cross sections for the vibrational excitation of H2O and CO2 by atomic oxygen. The calculational results are shown to compare quite well with existing experimental data. (Author)

AD-A092 118/9 Not available NTIS
Rensselaer Polytechnic Inst., Troy, NY. Dept. of Physics.
Adatom Mobility on the Surface Planes of a Simple Metal,
A. B. Meador, Te-Hua Lin, and H. B. Huntington. 4 Feb 80, 21p ARO-14766.2-MS
Grants DAAG29-78-G-0065, NGL33-018-003
Availability: Pub. in Surface Science, v97 p53-72 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 119/7 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Chemistry.
Quadratic Jahn-Teller Coupling in Octahedral Systems,
E. R. Bernstein, and J. D. Webb. 9 Feb 78, 7p ARO-14771.6-C
Grant DAAG29-77-G-0133
Availability: Pub. in Molecular Physics, v36 n4 p1113-1118 1978 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 162/7 PC **A02**/MF **A01**
Texas A and M Univ., College Station. Dept. of Chemistry.
Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
Interim technical rept.,
D. E. Bergbreiter, and M. S. Bursten. 1 Nov 80, 20p Rept no. TR-6
Contract N00014-77-C-0426

The novel use of polymeric reagents as selective phosphine absorbers in a homogeneous catalysis is presented. Silver(I) p-toluene sulfonate (A) is shown to absorb tertiary phosphines from organic solution and to restore PPh3-inhibited homogeneous hydrogenation of alkenes by RhCIL3 (L=PPh3) to a non-inhibited rate. Treatment of RhCIL3 with ethylene in presence of A followed by addition of a second alkene and removal of ethylene under reduced pressure leads to an increased rate of hydrogenation for several alkenes. (Author)

AD-A092 183/3 PC **A02**/MF **A01**
Chicago Univ., IL. James Franck Inst.
Gas Surface Dynamics, High Power Laser-Solid Interactions.
Final rept. 1 Jan 78-31 Dec 79,
Lennard Wharton. 6 Oct 80, 11p AFOSR-TR-80-1114
Grant AFOSR-77-3186

This work is a continuation of studies of fundamental aspects of the dynamics of chemical and physical processes on surfaces. The use of pulsed molecular beams and pulsed laser energy beams to initiate and probe energy exchange and chemical reactions that occur between gases and metal surfaces has been made in experimental studies. The product species and translational kinetic energies are determined with the aid of a mass spectrometer capable of determining the time of arrival of these species. These studies are relevant to the effects of high power laser beams on surfaces. Studies included the following gases: N2, O2, CO, H2, Ar, He, Ne, Xe, and the following surfaces W, Pt, Pt(III). (Author)

AD-A092 189/0 PC **A02**/MF **A01**
Massachusetts Inst. of Tech., Cambridge. Dept. of Chemistry.
One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
Final rept. 15 Jun 76-31 Aug 80,
Robert W. Field. 1 Sep 80, 10p AFOSR-TR-80-1143
Grant AFOSR-76-3056

Research programs in four general areas have resulted in publication of 16 papers, with 10 more in preparation. These areas include: optically pumped I2 B-X electronic transition laser; laser spectroscopy of alkaline earth halides; development of a new technique, Stimulated Emission Pumping, by which highly excited vibrational levels of combustion species may be selectively prepared and examined; optically pumped Na2 B-X laser. (Author)

AD-A092 211/2 PC **A02**/MF **A01**
Boston Coll., Chestnut Hill, MA. Dept. of Chemistry.
Carbon Dioxide Activation; Formation of trans-(Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
Technical rept.,
S. Fazley Hossain, Kenneth M. Nicholas, Carol L. Teas, and Raymond E. Davis. 11 Nov 80, 11p Rept no. TR-2
Contract N00014-78-C-0558
Prepared in cooperation with Texas Univ. at Austin. Dept. of Chemistry.

The intermediate produced from the interaction of HRh(CO) (PPh3)3 with CO reacts with CO2 to yield a novel bicarbonate complex, trans-(PPh3) 2Rh(CO) (OCO2H) (I) whose structure has been established X-ray crystallographically. The bicarbonate complex undergoes reversible loss of CO2. Results from the reaction of DRh(CO)(PPh3)3/CO with CO2 are consistent with a mechanism for formation of I involving rhodium-promoted CO2 disproportionation followed by H transfer from Rh to O of coordinated carbonate. (Author)

AD-A092 213/8 PC **A03**/MF **A01**
Washington Univ., Seattle. Lab. for Chemometrics.
UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
Interim rept. Aug-Nov 80,
Clements Jochum, and Bruce R. Kowalski. Nov 80, 27p Rept no. TR-18
Contract N00014-75-C-0536

UFVA, an underlying variable factor analysis program is described. The theories of principal component analysis and nonlinear least squares projection techniques are outlined and compared. Several applications from various chemical fields are presented which show that a complete analysis of the underlying structure and dimensionality of a chemical data set should always included these nonlinear projection techniques. (Author)

AD-A092 222/9 PC **A02**/MF **A01**
Texas Univ. at Austin. Dept. of Chemistry.
Photocatalytic Reaction of Water with Carbon over Platinized Titania.
Technical rept. no. 17, 1 Jan-31 Dec 80,
S. Sato, and J. M. White. 10 Oct 80, 23p
Contract N00014-75-C-0922

The reaction of gas phase water with active carbon over illuminated, platinized TiO2 (anatase powder) is studied at room temperature and 60 C. The products are H2, CO2 and a small amount of O2. As the reaction proceeds, the rate declines due to the accumulation of H2 and the loss of a good contact between the catalyst and carbon. When the reaction is carried out in liquid H2O, the oxidation of carbon is inhibited and O2 as well as H2 evolves. (Author)

AD-A092 223/7 PC **A02**/MF **A01**
Texas Univ. at Austin. Dept. of Chemistry.
On the Photoassisted Hydrogen Production from Titania and Water.
Technical rept. no. 18, 1 Jan-31 Dec 80,
S. Sato, and J. M. White. 12 Nov 80, 17p
Contract N00014-75-C-0922

When TiO2, reduced by H2 or CO, is placed in an ambient of gas phase water and illuminated with band gap light, H2 is evolved. Adding a small amount of O2 completely retards this reaction. A dark reaction of reduced TiO2 with water to form H2 also occurs at temperatures above 200 C. These results show that H2 evolution is not the result of catalytic water photolysis but a photoassisted reaction of water with oxygen vacancies produced by the reduction. (Author)

AD-A092 239/3 PC **A03**/MF **A01**
Oklahoma Univ., Norman. Dept. of Chemistry.
Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
Technical rept.,
K. C. Molloy, M. B. Hossain, D. van der Helm, J. J. Zuckerman, and F. P. Mullins. 15 Nov 80, 35p Rept no. TR-25
Contract N00014-77-C-0432
See also AD-A091 571. Prepared in cooperation with Mount Saint Vincent Univ., Halifax (Nova Scotia).

No abstract available.

AD-A092 317/7 PC **A03**/MF **A01**
California Univ., San Diego, La Jolla. Dept. of Chemistry.
Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
Technical rept.,
Kent R. Wilson, and Peter H. Berens. Nov 80, 27p Rept no. TR-2
Contract N00014-78-C-0325

The pure rotational and vibrational-rotational absorption bands for a diatomic are calculated directly from classical molecular dynamics, classical linear response theory and classical statistical mechanical ensemble averaging with the use of simple quantum corrections. The experimental spectral band intensities and contours are well reproduced for CO from dilute gas phase through solution in compressed Ar to solution in liquid Ar by these 'Newtonian' classical spectral calculations. The typical evolution seen in vibrational spectra

from multiple-peaked gas phase bands to single-peaked solution bands is observed. The 'Newtonian' gas phase calculations also match quantum and correspondence principle classical spectral calculations. This molecular dynamic approach may be applied to compute the spectra of complex molecules or of liquids for which a normal mode analysis may be impractical, and may also be extended to nonequilibrium systems, for example to compute transient vibrational spectra during chemical reactions. (Author)

AD-A092 322/7 PC **A03**/MF **A01**
Illinois Univ. at Urbana-Champaign. Dept. of Chemistry.
Chemiluminescence of Secondary Peroxyesters.
Technical rept.,
Brian G. Dixon, and Gary B. Schuster. 14 Nov 80, 50p
Contract N00014-76-C-0745

The thermolysis of 1-phenylethylperoxyacetate and a series of substituted 1-phenylethylperoxybenzoates was investigated. Thermolysis in benzene gives acetophenone and the corresponding carboxylic acid. The study of the reaction kinetics and kinetic isotope effect indicate that the unimolecular thermolysis proceeds by homolysis of the oxygen-oxygen bond. Electronically excited states are formed in the thermolyses of these peroxyesters. These are detected by their characteristic direct chemiluminescence or by indirect chemiluminescence. In the presence of easily oxidized catalysts these peresters give excited states by the chemically initiated electron-exchange luminescence (CIEEL) path. The mechanism of these luminescent reactions was investigated. (Author)

AD-A092 323/5 PC **A02**/MF **A01**
Indiana Univ. at Bloomington. Dept. of Chemistry.
Facile Cleavage of the Mo=Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
Technical rept.,
Malcolm H. Chisholm, Kirsten Folting, John C. Huffman, Charles C. Kirkpatrick, and Andrew Ratermann. 31 Oct 80, 10p Rept no. TR-80-6
Contract N00014-76-C-0826

Product I is structurally related to (MoMe2(NBu(+))2)2 recently characterized by Nujent and Harlow; Product II, the tert-butyl ester of molybdic acid, is the first molecular of its kind to be prepared for the group 6 transition elements.

AD-A092 332/6 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Chemistry.
Raman Spectra of SiF4 and GeF4 Crystals,
E. R. Bernstein, and G. R. Meredith. 28 Dec 76, 8p ARO-14771.8-C
Grant DAAG29-77-G-0133
Availability: Pub. in Jnl. of Chemical Physics, v67 n9 p4132-4138, 1 Nov 77 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 333/4 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Chemistry.
The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6,
E. R. Bernstein, G. R. Meredith, and J. D. Webb. 2 Dec 77, 9p ARO-14771.9-C
Grant DAAG29-77-G-0133
Availability: Pub. in Jnl. of Chemical Physics, v68 n9 p4066-4072, 1 May 78 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 334/2 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Chemistry.
On the Jahn-Teller Effect in ReF6,
G. R. Meredith, J. D. Webb, and E. R. Bernstein. 14 Dec 76, 24p ARO-14771.10-C
Grant DAAG29-77-G-0133
Availability: Pub. in Molecular Physics, v34 n4 p995-1017 1977 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 335/9 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Chemistry.
Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State,
E. R. Bernstein, and J. D. Webb. 28 Feb 78, 8p ARO-14771.11-C
Grant DAAG29-77-G-0133
Availability: Pub. in Molecular Physics, v37 n1 p203-209 1979 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 336/7 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Chemistry.
Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals,
E. R. Bernstein, and G. R. Meredith. 11 Mar 77, 12p ARO-14771.12-C
Grant DAAG29-77-G-0133
See also AD-A092 337.
Availability: Pub. in Chemical Physics, v24 p289-299 1977 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 337/5 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Chemistry.
Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States,
E. R. Bernstein, and G. R. Meredith. 11 Mar 77, 10p ARO-14771.13-C
Grant DAAG29-77-G-0133
See also AD-A092 338.
Availability: Pub. in Chemical Physics, v24 p301-309 1977 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 338/3 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Chemistry.
Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6,
E. R. Bernstein, and G. R. Meredith. 11 Mar 77, 16p ARO-14771.14-C
Grant DAAG29-77-C-0133
See also AD-A092 336.
Availability: Pub. in Chemical Physics, v24 p311-325 1977 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 355/7 PC **A03**/MF **A01**
Illinois Univ. at Urbana-Champaign. Dept. of Chemistry.
Chemically Initiated Electron-Exchange Luminescence.
Technical rept.,
Gary B. Schuster, and Keith A. Horn. 14 Nov 80, 35p
Contract N00014-76-C-0745

The mechanism of chemiluminescence for diphenoyl peroxide and dimethyldiozetanone is reviewed. Heavy emphasis is placed on the chemically initiated electron exchange luminescence mechanism. (Author)

AD-A092 356/5 PC **A03**/MF **A01**
Illinois Univ. at Urbana-Champaign. Dept. of Chemistry.
On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
Technical rept.,
Franco Scandola, Vincenzo Balazani, and Gary B. Schuster. 14 Nov 80, 27p
Contract N00014-76-C-0745

The relationship between the free energy change and the activation energy for electron transfer reactions is examined. Two general classes, reversible and irreversible, processes are discussed, and the relation between them studied. An analysis of the differences between linear and non-linear free energy relationships is presented. (Author)

AD-A092 357/3 PC **A02**/MF **A01**
Illinois Univ. at Urbana-Champaign. Dept. of Chemistry.
Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
Technical rept.,
Steven P. Schmidt, Mark A. Vincent, Clifford E. Dykstra, and Gary B. Schuster. 14 Nov 80, 18p
Contract N00014-76-C-0745

SCF calculations using a 4-31G basis set were performed on dioxetanone. The results indicate that the four ring atoms of this peroxide are essentially coplanar. Also, stretching of the oxygen-oxygen bond does not lead to a concomitant increase in the carbon-carbon bond distance. This finding is taken to indicate that the thermal reaction of dioxetanone proceeds through a biradical. A rationalization of the very different yields of excited state products from dioxetane and dioxetanone is based upon this conclusion. The properties of the radial anion obtained by adding an electron to the 16a' orbital were probed computationally. It was found that increasing the oxygen-oxygen bond distance of the anion results in a remarkable decrease in energy. This finding is taken as support of the details of the chemically initiated electron-exchange luminescence (CIEEL) path suggested to be responsible for the majority of the chemiluminescence for dioxetanones. (Author)

AD-A092 376/3 PC **A03**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
Technical rept.,
William R. Anderson, John E. Allen, Jr., and David R. Crosley. Aug 80, 43p ARBRL-TR-02262, AD-E430 527

A frequency doubled tunable dye laser has been used to selectively excite individual vibrational levels within v=2 and 6-9 of the B-state of diatomic sulfur. Measurements of the intensity in emission of all the terms returning to ground state vibrational levels permit the determination of absolute Franck-Condon factors. Combined with previous studies, this work completes the set of Franck-Condon factors for bound-bound transitions within the B-X system.

AD-A092 419/1 PC **A07**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
Master's thesis,
Nils Akerlind, Jr. May 80, 144p Rept no. AFIT-CI-80-15T

Like other analytical techniques, flameless atomic absorption is subject to matrix or interference effects. Upon heating, nitrate and sulfate salts decompose to generate oxidizing species such as nitrogen dioxide or sulfur trioxide. These concomitant oxidants are capable of gas phase reactions with the analyte atoms, thereby reducing the analyte free atom concentration and thus decreasing the analyte absorbance signal. The effects of sodium nitrate, potassium nitrate, sodium sulfate or potassium sulfate on the absorbance signal of iron, nickel, tin, chromium, silver, and copper was studied utilizing both the graphite filament atomizer and the graphite furnace atomizer. Thermodynamic calculations were employed to explain/predict the effects of oxygen on the analyte free atom concentration. An optical system was developed which allows the simultaneous measurement of the transient absorbance signal at various spatial zones with the commercial furnace atomizer. (Author)

AD-A092 488/6 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
The Dissociation Energies of Gaseous Praseodymium- and Neodymium-Monoxides and Their Structure.
Final rept.,

Edmond Murad. 3 Aug 78, 4p
Pub. in Chemical Physics Letters, v59 n2 p359-361, 15 Nov 78.

No abstract available.

AD-A092 497/7 Not available NTIS
Virginia Univ., Charlottesville. Dept. of Chemistry.
Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer,
Donald F. Hunt, Jeffrey Shabanowitz, and Anne B. Giordani. 22 Oct 79, 7p ARO-17042.1-C
Contract DAAG29-80-G-0101, Grant DAAG29-76-G-0326
Availability: Pub. in Analytical Chemistry, v52 n3 p386-390 Mar 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 506/5 PC **A02**/MF **A01**
Columbia Radiation Lab. New York.
Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
Rept. for 1 Jun 79-31 May 80,
R. Kachru, T. W. Mossberg, and S. R. Hartmann. 24 Mar 80, 7p
Contracts N00014-78-C-0517, DAAG29-79-C-0079
Pub. in Jnl. of Physics B: Atomic and Molecular Physics, n13 pL363-L368 1980.

No abstract available.

AD-A092 507/3 Not available NTIS
Texas Univ. at Austin.
Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability,
R. W. Bene, R. M. Walser, G. S. Lee, and K. C. Chen. 7 Mar 80, 5p
Contracts N00014-75-C-0916, F49620-77-C-0101
Availability: Pub. in The Jnl. of Vacuum Science and Technology, v17 n5 p911-915 Sep/Oct 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A950 101/6 Not available NTIS
Naval Research Lab., Washington, DC.
The Thermoluminescence of CaF2:Mn,
Robert J. Ginther, and Russell D. Kirk. 1 Nov 56, 5p Rept no. NRL-REPRINT-1645
Availability: Pub. in Jnl. of the Electrochemical Society, v104 n6 p365-369 Jun 57 (No copies furnished by DTIC/NTIS).

No abstract available.

AECL-6401 PC **A05**/MF **A01**
Atomic Energy of Canada Ltd., Chalk River (Ontario). Chalk River Nuclear Labs.
Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
Oct 78, 98p PR-CMa-46
U.S. Sales Only.

Measurements have been made of the dependence of heavy-ion-induced x-ray yields upon the charge state of the ion. The nature of the anodic oxide films on aluminum have been found to depend upon the chemical composition of the solution in which they are formed. Recent experiments show that, for different bombarding directions, the amount of damage produced in a crystal is proportional to the number of ions backscattered from the crystal. The yield of excited nitrogen atoms formed in the radiolysis of nitrogen gas, as deduced from experiments with nitrogen-hydrogen mixtures, does not agree with our earlier data obtained with nitrogen-nitrous oxide mixtures. The yields of molecular hydrogen and carbon monoxide from multi-line laser irradiaton of formaldehyde have been found to be eight times larger than the corresponding single-line yields. Multiphoton absorption of a hydrogen fluoride laser line in methanol vapour has been observed at low pressures, demonstrating that collisions between the molecules are not needed in this process. A kinetic analysis of the proton exchange rate between potassium methylamide and methylamine and a reinterpretation of published data on the ammonia-amide system have revealed evidence of two catalytic species. The relative reactivity towards gaseous O sub 2 of linear and bridged CO species on a platinum (III) surface has been measured. A method for theanalysis of trace concentrations of metal ions by high-performance liquid chromatography has been developed. The precipitation of hydride particles in zirconium and titanium at low temperatures has been shown to proceed by shear processes involving dislocations of the atoms in the microcrystals forming the metal. (Atomindex citation 11:529189)

AECL-6413 PC **A03**/MF **A01**
Atomic Energy of Canada Ltd., Chalk River (Ontario). Chalk River Nuclear Labs.
MAKSIMA-CHEMIST: A Program for Mass Action Kinetics Simulation by Automatic Chemical Equation Manipulation and Integration Using Stiff Techniques.
M. B. Carver, D. V. Hanley, and K. R. Chaplin. Feb 79, 28p
U.S. Sales Only.

MAKSIMA-CHEMIST was written to compute the kinetics of simultaneous chemical reactions. The ordinary differential equations, which are automatically derived from the stated chemical equations, are difficult to integrate, as they are coupled in a highly nonlinear manner and frequently involve a large range in the magnitude of the reaction rates. They form a classic 'stiff' differential equation set which can be integrated efficiently only by recently developed advanced techniques. The new program also contains provision for higher order chemical reactions, and has a dynamic storage and decision feature. This permits it to accept any number of chemical reactions and species, and choose an integraton scheme which will perform most efficiently within the available memory. Sparse matrix techniques are used when the size and structure of the equation set is suitable. Finally, a number of post-analysis options are available, including printer and Calcomp plots of transient response of selected species, and graphical representation of the reaction matrix. (Atomindex citation 11:529147)

AERE-M-3047 PC **A02**/MF **A01**
UKAEA Atomic Energy Research Establishment, Harwell (England). Environmental and Medical Sciences Div.
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
N. J. Pattenden, E. M. R. Fisher, and E. M. Bones. Oct 79, 17p
U.S. Sales Only.

A limited number of old exposed air filters from a network of sampling stations extending the length of North and South America have been analysed for many trace elements. (The network is run by the United States Department of Energy Environmental Measurements Laboratory). The objective was to assess the possible value of a large program of such measurements for providing information on the trace element concentrations in airborne particulates existing at the time of sample collection. On the basis of the evidence obtained, it is considered that valid information could be extracted in this way. In view of the extent of the store of old filters, which cover about a 10 year period up to the present day from stations spread over the North and South American continents and elsewhere, such a program appears to be well worthwhile. (Atomindex citation 11:524645)

BNL-28332 PC **A03**/MF **A01**
Brookhaven National Lab., Upton, NY.
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
S. Z. Levine. 1980, 26p CONF-801114-7
Contract AC02-76CH00016
Symposium on plumes and visibility, Grand Canyon, AZ, USA, 10 Nov 1980.

Two mechanisms are presented and employed to simulate the solar irradiation of an expanding plume consisting of SO sub 2 , NO, NO sub 2 , CO, and olefin at initial concentrations expected in power plant emissions. The first mechanism is a conventional atmospheric photochemical model consisting of 30-species while the second is a 15-species surrogate which accurately reproduces the results obtained with the first mechanism and does so with a 60 to 70% savings in execution time. SO sub 2 conversion rates in the range of 0.05 to 6% hr exp -1 are predicted and the oxidation mechanism is found to be controlled by the HO-SO sub 2 and O-SO sub 2 reactions with the latter significantly contributing to H sub 2 SO sub 4 formation in the early stages of the plume life. (ERA citation 06:001304)

BNL-28347 PC **A03**/MF **A01**
Brookhaven National Lab., Upton, NY.
Atmospheric Oxidation of Sulfur Dioxide as Viewed from Power Plant and Smelter Plume Studies.
L. Newman. 1980, 28p CONF-801114-6
Contract AC02-76CH00016
Symposium on plumes and visibility, Grand Canyon, AZ, USA, 10 Nov 1980.

An overview is presented of significant historical, recent, and new power plant and smelter plume studies which have been directed at understanding the atmospheric oxidation of sulfur dioxide. It can be concluded that the average rate of oxidation of sulfur dioxide in plumes entering into and mixing with clean air is generally less than 1% per hour but with polluted urban air the rate can be at least twice as fast. In addition, a diurnal variation in the rate is sometimes observed that is near zero at night and approximately 3% during midday. Although there is a tendency to select the homogeneous over the heterogeneous mechanism as the dominant pathway for the oxidation, the basis for choice is not definitive and most likely both mechanisms are at times operative. Suggestions are advanced for new and important studies that can be performed with technologies just becoming available. (ERA citation 06:001305)

CEA-CONF-4757 PC **A02**/MF **A01**
CEA Centre d'Etudes Nucleaires de Fontenay-aux-Roses (France). Dept. de Chimie Appliquee.
Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
A. Travalloni, M. Broc, G. Chauvin, H. Coriou, and J. Dixmier. 1979, 2p CONF-7908120-1(Abst.)
30. annual meeting of the International Society of Electrochemistry, Trondheim, Norway, 27 Aug 1979.
U.S. Sales Only.

No abstract available.

CEA-CONF-4808 PC **A02**/MF **A01**
CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Dept. de Recherche et Analyse.
Raman and I.R. Spectra of the NH and ND Stretching Region in Polycristalline Imidazole, exp 15 N and D Substituted Analogs.
M. Majoube. 1979, 8p
14. European congress on molecular spectroscopy, Frankfurt am Main, Germany, F.R. 3 - 7 Sep 1979.
U.S. Sales Only.

I.R. and Raman Spectra of imidazole and eleven exp 15 N and D substituted analogs have been analysed, in the region 3300-1800 cm exp -1 . The broad bands with fine structure observed correspond to two spectral features: a) The overall broad bands are attributed to associated NH(D)...N stretching vibrations. Observed nu NH exp 15 N shifts are 10 to 15 cm exp -1 in I.R. which is more than expected for pure nu NH. This is probably due to nu NH coupling with external modes. b) The fine structure is interpreted as due to interactions by Fermi resonance of nu NH(D) with overtones and combinations of internal modes. Considering the temperature and exp 15 N shifts, transmission windows or Evans holes rather than band maximum are found to correspond to overtone and combination values. (Atomindex citation 11:524718)

CEA-R-5013 PC **A04**/MF **A01**
CEA Centre d'Etudes de Bruyeres-le-Chatel, Montrouge (France).
Quantitative Analysis of Carbon in Plutonium.
C. Lefevre. Nov 79, 58p
In French.
U.S. Sales Only.

The aim of this study is to develop a method for the determination of carbon traces (20 to 400 ppm) in plutonium. The development of a carbon in plutoni-

um standard is described, then the content of this substance is determined and its validity as a standard shown by analysis in two different ways. In the first method used, reaction of the metal with sulphur and determination of carbon as carbon sulphide, the following parameters were studied: influence of excess reagent, surface grcwth of samples in contact with sulphur, temperature and reaction time. The results obtained are in agreement with those obtained by the conventional method of carbon determination, combustion in oxygen and measurement of carbon in the form of carbon dioxide. Owing to the presence of this standard we were then able to study the different parameters involved in plutonium combustion so that the reaction can be made complete: temperature reached during combustion, role of flux, metal surface in contact with oxygen and finally method of cleaning plutonium samples. (Atomindex citation 11:524630)

CEA-R-5020 PC **A05**/MF **A01**
CEA Centre d'Etudes Nucleaires de Fontenay-aux-Roses (France). Dept. d'Etudes des Combustibles a Base de Plutonium.
Study of the Kinetics of Oxygen Redistribution in UOsub(2+X) and UCeO sub 2 Due to a Temperature Gradient.
R. Ducroux. Nov 79, 93p
In French.
U.S. Sales Only.

The aim of this work is to study out of pile the oxygen redistrbution in UOsub(2+x) in order to explain the O/U+Pu profiles obtained in quenched mixed oxide fuels. The thermal gradient has been obtained by a 'mirror furnace'. The focal spot (0,5 cm exp 2 area) is maintained at the top of the cylindrical sample; the cold part of the pellet is in contact with the upper side of a molybdenum furnace. This maintains a solid electrolyte probe at fixed temperature (ThO sub 2 - Y sub 2 O sub 3) which contains a Fe/FeO chemical reference. This probe gives continuously the oxygen activity at the cold part of the sample. It has been tested in measuring the oxygen potential of several chemical systems. The experiments have been achieved under argon purified by electrochemical pumps. The linear temperature profile was estimated showing a 300 exp 0 C/cm thermal gradient. The hot side temperature did not exceed 1100 exp 0 C in order to avoid the UO sub 3 evaporation. The EMF was continuously recorded during the anneal under thermal gradient. After quenching, the sample was cut in five or six slices. In each one, the analysis of the O/U ratio was performed. Though the annealing-times were short and the temperature of the hot side relatively low, the observed oxygen redistributions were found important, showing that the oxygen migrates to the hot part of the sample. (Atomindex citation 11:524896)

CRN-CPR-79-16 PC **A02**/MF **A01**
Strasbourg-1 Univ. (France). Centre de Recherches Nucleaires.
Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
C. Scharager, R. Stuck, P. Siffert, J. Cailleret, and Ch. Heitz. 1979, 18p
U.S. Sales Only.

The possibilities of using both selective heavy ion induced X-ray emission and secondary ion mass spectroscopy (SIMS), for the identification of impurities present at low concentrations in cadmium telluride are examined. The relative concentrations of the impurities along CdTe crystals have been determined by exciting the X-ray emission of the elements in several slices with Ar and Kr ions and by comparing the relative characteristic X-ray emission yields. As a consequence of the quasimolecular inner shell ionization mechanism in heavy ion-atom collisions, Ar and Kr ions allow a strong excitation of the main impurities seen by SIMS namely Si, Cl and Ge, As, with only a minor contribution of Cd and Te. From the changes of the concentrations of the various impurities along the crystal, informations about segregation coefficients and compensation can be obtained. (Atomindex citation 11:524813)

CRN-CPR-79-7 PC **A07**/MF **A01**
Strasbourg-1 Univ. (France). Centre de Recherches Nucleaires.
0.5 to 6 MeV Ar Ion Induced X-Ray Emission in View to Analytical Application.
These (3e Cycle),
M. D. Tenorio Castilleros. 1979, 129p
In French.
U.S. Sales Only.

A study of the X-ray emission induced by 0.5 to 6 MeV Ar ions has been realized in view of multielemental analytical applications. The historical development of the use of heavy ion induced X-ray emission in analysis and the theoretical background of inner-shell ionization in heavy ion-atom collisions are described. The emission of noncharacteristic X-rays and the effects related to the penetration of heavy ions in matter are also related. The experimental part contains a description of the experimental devices and of the X-ray spectra fitting method. Thick target yields as a function of the target Z and the Ar ion energy are reported. The analytical possibilities are examined and an application to the analysis of Si and Cl in cadmium telluride crystals is given. (Atomindex citation 11:524815)

DESY-SR-79/27 PC **A02**/MF **A01**
Deutsches Elektronen-Synchrotron, Hamburg (Germany, F.R.).
3P - 3D Intershell Interaction in Cr.
J. Barth, F. Gerken, K. L. I. Kobayashi, J. H. Weaver, and B. Sonntag. Oct 79, 6p
U.S. Sales Only.

The photoemission of Cr films deposited under UHV conditions has been investigated in the photon energy range from 30 eV to 230 eV. The 3p - 3d intershell interaction gives rise to a strong maximum in the 3d partial yield above the 3p threshold. (Atomindex citation 11:518916)

DOE/ER/01763-T1 PC **A02**/MF **A01**
Ohio State Univ., Columbus.
Pulse Radiolysis of Fast Reactions in Molecular Systems. Progress Report, November 1979-September 1980.
L. M. Dorfman. 1980, 12p
Contract AS02-76ER01763

The rates of elementary chemical reactions in irradiated solutions are being studied by observation of reactive intermediates using the pulse radiolysis technique. Optical absorption spectra of these transient species, which determine the course of the chemistry, are being obtained. The types of reactive species currently of interest are organic molecule ions (both cations and anions) and radical ions, and transition metal carbonyl radicals in solution. Since reaction is initiated by a pulse of high energy electrons, our investigations inherently relate to radiation chemical systems. The information obtained is, however, also of interest in various areas of organic reaction kinetics in which ionic species are known to play a central role. The rectivity of the transition metal carbonyl radicals is of interest in the area of homogeneous catalysis. Current activities involve: spectra and reactivities of transition metal carbonyl radicals of the type M(CO) sub 5 ; reactivity of organic ionic species (including carbocations and carbanions) in irradiated solutions. (ERA citation 05:038486)

DOE/ER/03158-73 PC **A03**/MF **A01**
Cornell Univ., Ithaca, NY. Dept. of Materials Science and Engineering.
Range Profiles of Low Energy (100 to 1500 EV) Implanted exp 3 He and exp 4 He in Tungsten. II. Analysis and Discussion. Materials Science Center Report No. 4108.
J. Amano, A. Wagner, and D. N. Seidman. Aug 80, 38p
Contract AS02-76ER03158

The identifiable sources of possible systematic error in the measurement of the mean range (x bar) and the straggling (delta x) of the exp 3 He and exp 4 He range profiles, reported on in a previous paper were modeled mathematically and the resulting expressions numerically evaluated. The evaluations showed that these possible sources of systematic error were not of significant magnitude to affect the range parameters x bar and delta x. The role of the transfer of energy, either indirectly or directly, from the incoming beam of He ions to those He atoms that had already been implanted was also considered as a possible source of systematic error. It was shown that there was a possibility of radiation-induced diffusion or the simple collisional displacement of He atoms at an implantation energy of 100 eV and a dose of 4 x 10 exp 15 cm exp -2 . It was also demonstrated that for the sample sizes employed in the experimental work (Part I) the integral profiles were characterized with a reasonable degree of statistical significance. The experimental results presented in Part I were compared with the calculated results of Biersack's and Haggmark's TRIM simulation program. There was qualitative agreement between the experimental and calculated values of the range parameters but not quantitative. In general, the experimental values of the dimensionless range parameters were greater then the calculated values. The possible sources of this discrepancy were attributed to: the use of the Moliere interatomic potential in the TRIM program; and possible low-energy channeling effects along the (110) direction of W. Simple expressions were given for the experimental range-energy data and the effective stopping powers of both exp 3 He and exp 4 He in W in the energy range 100 to 1500 eV. (ERA citation 05:038910)

DOE/ER/04445-T1 PC **A02**/MF **A01**
Illinois Inst. of Tech., Chicago. Dept. of Chemical Engineering.
Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
J. R. Selman. Apr 80, 12p
Contract AS02-77ER04445

Additional experimental data on acetylide solutions in contact with graphite and carbon indicate that intercalation occurs not only in Li exp + -containing melts but also in Ca exp 2+ melts. Emf measurements are being carried out to determine the calcium activity in Ca-Al alloys. Proposed work include carbonate reduction to acetylides and the mechanism of the corrosion resistance of Mo in molten halides. (ERA citation 06:001148)

DOE/ER/05031-2 PC **A02**/MF **A01**
Amherst Coll., MA.
Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
B. B. Benson, and D. Krause, Jr. Sep 80, 19p
Contract AS02-78ER05031

Research under this contract provides strong evidence for the existence of structure in liquid water. Application of a simple zero-point-energy argument to our data for the isotopic fractionation of nonpolar gases during aqueous solution shows that a dissolved gas molecule may be considered to occupy a cavity with a size characteristic of water and independent of the size of the solute molecule. For a cubical cavity model for water, the length of a side of the cube would be approximately 6.3 A at 0 exp 0 C, while a spherical cavity model would have a dia of 6.8 A. The isotopic measurements in addition may lead to a more consistent set of diameters for the solute molecules. Precise new measurements show that the isotopic fractionation of nitrogen during solution is only slightly smaller than that for oxygen, despite the fact that the difference between the reciprocal masses of the 28 to 29 pair is only one-half the difference for the 32 to 34 pair. The cavity model provides a simple quantitative explanation for this result. Measurements on the polar molecules exp 12 C exp 16 O, exp 13 C exp 16 O, and exp 12 C exp 18 O do not fit the simple model, because of the asymmetrical distributions of their masses. This leads to a correlation between rotational and translational degrees of freedom, which affects the energies of the ground states of these heteronuclear molecules as they oscillate within the cavity. (ERA citation 06:001168)

DOE/ET/10104-T3 PC **A09**/MF **A01**
Washington State Univ., Pullman. Nuclear Radiation Center.
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
S. R. Khalil. Feb 80, 192p
Contract AC01-76ET10104

Instrumental neutron activation analysis was used to study the distribution and fate of up to 36 elements in the Solvent Refined Coal Process Pilot Plant located at Fort Lewis, Washington. The elements Ti, V, Mg, Ca, Al, Cl, Mn, As, Br, Na, K, Sm, La, Ga, Cu, Sb, Se, Hg, Ni, Co, Cr, Fe, Rb, Cs, Sc, Tb, Eu, Ce, Sr, Ba, Th, U, Hf, Ta, Zr and Zn were measured in feed coal, insoluble residues, process solvent, process and effluent waters, by-product sulfur, SRC-I solid product, liquid-liquid separator oils and SRC-II liquid products. The material balance was calculated for each element from the concentration data and yields of each process fraction for both the SRC-I and SRC-II processes. Except for Ti, Cl and Br in the SRC-I mode and Hg in the SRC-II mode, each element was substantially lower in the SRC products than in the original feed coal. Residues from the process contained more than 80% of the trace element content found in the coal, except for Hg. More than 98.5% of the total contents of K and Fe in coal were retained in the insoluble residues. Elements such as Hg, Se, As and Sb can form volatile compounds (such as Hg exp 0 , H sub 2 Se, AsH sub 3 and SbH sub 3) stable under the process conditions. The high enhancement factors of Se (957), As (202) and Sb (27.4) in the aqueous phase of the separator water compared to that of the oil are evidence for the formation of volatile species which are more soluble in water than in the oil phase. (ERA citation 06:000097)

DOE/TIC-11285 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Oak Ridge National Lab., Tennessee.
D. H. Crandall. 41p
Contract W-7405-ENG-26

The available literature on electron impact ionization of ions of charge + 3 or greater is reviewed. Several easily used formulas are presented - the classical result, the Lotz formula, and a scaled Coulomb-Born prescription. The available experimental cross sections, which now include a few good quality crossed-beams measurements, are compared with the cross sections obtained from the formulae and where available with true Coulomb-Born calculations. The Lotz formula is found to be closest to the various experimental results. However, this result may be fortuitous since much of the experimental data are found to contain measurable contribution from the excitation-autoionization process not included in any of the formulae. It appears to be more important to include estimates of the excitation-autoionization contribution to ionization cross sections than to improve the models of the direct ionization process. (ERA citation 06:001461)

DOUNREAY-TRANS-826 PC **A02**/MF **A01**
UKAEA Dounreay (Scotland). Nuclear Power Development Establishment.
Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
E. Mainka. Nov 78, 12p
U.S. Sales Only.

Analytical methods are described for (a) sodium; (b) the following anions of sodium aerosols: OH exp - , CO sub 2- and HCO sub 3- ; (c) fission products Cs and Sr. For sodium, the ion selective electrode was used. The anions were determined by a titration method using phenolphthalein and methyl orange as indicators. Atomic absorption spectroscopy was used for Cs and Sr. (Atomindex citation 11:524632)

IPNO-T-79-05 PC **A05**/MF **A01**
Paris-11 Univ., Orsay (France). Inst. de Physique Nucleaire.
Study by Thermochromatography of Fluorides of Transuranium Elements.
These (3e Cycle),
B. Jouniaux. 1979, 99p
In French.
U.S. Sales Only.

Thermochromatography was made suitable for fluoride study. So, an investigation of actinide tetrafluorides was accomplished from uranium to californium. Pentavalent and hexavalent fluorospecies of uranium, neptunium, plutonium and ruthenium were studied. Some new compounds have been identified in gaseous phase, whose: PuF sub 5 , PuOF sub 3 and PaOF sub 3 . Furthermore, some presomptions as for the existence in gaseous phase of EsF sub 4 and of an heptavalent fluorospecies of plutonium have been established. An important analogy between plutonium and ruthenium behaviour with fluorine have been shown, these results could explain the difficulties encountered in the fluoride-volatility processes. (Atomindex citation 11:524791)

K/ET-594 PC **A02**/MF **A01**
Oak Ridge Gaseous Diffusion Plant, TN.
Extrapolation to the U-F System from the Mo-F System.
J. M. Leitnaker. 27 Aug 80, 13p
Contract W-7405-ENG-26

A review of the thermodynamic data on the U-F system, a summary of the thermodynamic data on the Mo-F system, and a comparison of the two systems, and speculation about missing entities are presented in this report. The thermodynamic data include: entropies, melting points, enthalpies of formation of the established solid uranium and molybdenum fluorides; and entropies and enthalpies of formation of gaseous uranium and molybdenum fluoride. Upon concluding his studies, the author speculated on the presence of compounds such as U sub 2 F sub 11 and U sub 4 F sub 23 in the solid state, and U sub 3 F sub 15 , U sub 4 F sub 20 , and U sub 5 F sub 25 in the gaseous state. None of these have been observed. (ERA citation 05:038495)

LBL-11434 PC **A08**/MF **A01**
California Univ., Berkeley.
Photoelectron Photoion Molecular Beam Spectroscopy.
D. J. Trevor. Dec 80, 155p
Contract W-7405-ENG-48
Thesis.

The use of supersonic molecular beams in photoionization mass spectroscopy and photoelectron spectroscopy to assist in the understanding of photoexcitation in the vacuum ultraviolet is described. Rotational relaxation and condensation due to supersonic expansion were shown to offer new possibilities for molecular photoionization studies. Molecular beam photoionization mass spectroscopy has been extended above 21 eV photon energy by the use of Stanford Synchrotron Radiation Laboratory (SSRL) facilities. Design considerations are discussed that have advanced the state-of-the-art in high resolution vuv photoelectron spectroscopy. To extend gas-phase studies to 160 eV photon energy, a windowless vuv-xuv beam line design is proposed. (ERA citation 05:038911)

LYCEN-7941 PC **A03**/MF **A01**
Lyon-1 Univ., Villeurbanne (France). Inst. de Physique Nucleaire.
Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
J. P. Thomas, M. Fallavier, J. M. Mackowski, C. Pijolat, and J. Tousset. 1979, 30p
U.S. Sales Only.

A review is presented summarizing the specific nuclear microanalysis methods applied in our laboratory to the study of amorphous semiconductor thin films. For backscattering, approximately 3 MeV Li ions are applicable when depth resolution and sensitivity are required while up to 8 MeV alpha -particles allow larger depths to be probed and elemental interferences to be solved. These features are predominant for into diffusion studies between metal electrodes and chalcogenide films. On the other hand hydrogen profiling using the exp 1 H(exp 15 N, alpha gamma) resonant nuclear reaction is described and analytical problems associated with its use are discussed. Application to the elaboration conditions of hydrogenated Si is developed. (Atomindex citation 11:524653)

NUREG/CR-1299 PC **A03**/MF **A01**
Battelle Pacific Northwest Labs., Richland, WA.
Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies,
R. M. Bean, and R. G. Riley. Nov 80, 42p PNL-3163

Chlorination of power plant cooling water is extensively used as a means of controlling biofouling. This practice presents the potential for formation of halogenated organic compounds hazardous to man and his environment. Accordingly, the organic composition resulting from the chlorination of natural waters (northern Olympic Pennisula sea water and the Columbia River in Washington State) has been investigated. Nonpolar lipophilic organic halogens were extracted by passing large volumes of water over columns of XAD-2 macro-reticular resins. Examination of ether extracts from the resin columns using capillary gas chromatography revealed the presence of halogenated methanes, as well as other electron-capturing components, that were not found when unchlorinated water was sampled. Examination of the chlorinated water extracts using gas chromatography/mass spectrometry revealed complex mixtures which generally were not separable into individual components, even when high efficiency WCOT capillary columns were used. The samples were separated into fractions of increasing polarity using a water-deactivated silica gel column. Fractions were thus obtained which were more amenable to GC/MS investigation. Haloforms were identified as the major halogenated product from chlorination of the waters studied. Other halogenated products were found at much lower concentrations.

PAT-APPL-6-110 738 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Improved Electrostatic Coalescense System with Independent AC and DC Hydrophilic Electrodes.
Patent Application,
A. D. Hovarongkura, and J. D. Henry, Jr. Filed 9 Jan 80, 15p
Contract EY-76-S-04-5105
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

An improved electrostatic coalescence system is provided in which independent AC and DC hydrophilic electrodes are employed to provide more complete dehydration of an oil emulsion. The AC field is produced between an AC electrode array and the water-oil interface wherein the AC electrode array is positioned parallel to the interface which acts as a grounded electrode. The emulsion is introduced into the AC field in an evenly distributed manner at the interface. The AC field promotes drop-drop and drop-interface coalescence of the water phase in the entering emulsion. The continuous oil phase passes upward through the perforated AC electrode array and enters a strong DC field produced between closely spaced DC electrodes in which small dispersed droplets of water entrained in the continuous phase are removed primarily by collection at hydrophilic DC electrodes. Large droplets of water collected by the electrodes migrate downward through the AC electrode array to the interface. All phase separation mechanisms are utilized to accomplish more complete phase separation. (ERA citation 06:001954)

PAT-APPL-6-111 495 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Method for Improving Dissolution Efficiency in Gas-Absorption and Liquid Extraction Processes.
Patent Application,
B. E. Kanak, and M. J. Stephenson. Filed 11 Jan 80, 15p
Contract W-7405-ENG-26
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

A method is described for improving dissolution efficiency in processes in which a feed fluid is introduced to a zone where it is contacted with a liquid solvent for preferentially removing a component of the feed and where part of the solvent so contacted undergoes transfer into the feed fluid to saturate the same. It has been found that such transfer significantly impairs dissolution efficiency. In accordance with the invention, an amount of the above-mentioned solvent is added to the feed fluid being introduced to the contact zone, the solvent being added in an amount sufficient to effect reduction or elimination of the above-mentioned transfer. Preferably, the solvent is added to the feed fluid in an amount saturating or supersaturating the feed fluid under the conditions prevailing in the contact zone. (ERA citation 06:002005)

PAT-APPL-6-115 900 PC **A03**/MF **A01**
Department of Health, Education, and Welfare, Washington, DC.
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
Patent Application,
Victor E. Marquez, Paul S. Liu, and John S. Driscoll. Filed 19 Dec 79, 28p PB81-131369
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

Seven-membered heterocyclic nucleosides used to inhibit the deamination enzyme responsible for the inactivation of arabinosylcytosine (ara-C). Active components utilized against pyrimidine deaminases from mammalian tissues (mouse kidney and human liver) showed optimum advantage when compared with tetrahydrouridine (THU).

PAT-APPL-6-143 129 PC **A02**/MF **A01**
Department of Health, Education, and Welfare, Washington, DC.
Separation of Triphenylphosphine Oxide from Methotrexate Ester and Purification of Said Ester.
Patent Application,
James A. Ellard, and James A. Webster. Filed 23 Apr 80, 9p PB81-129603
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The present invention is concerned with two process improvements which may be applied to the basic Ellard patent, 4,080,325, which dealt with the coupling of diethyl-N-(4-(methylamino)benzoyl)-L-glutamate with a 6-bromomethyl-2,4-diaminopteridine derivative to form diethyl methotrexate. This latter compound, upon hydrolysis of the ethyl ester groups, releases the free compound, methotrexate.

PAT-APPL-6-180 546 PC **A02**/MF **A01**
Department of Agriculture, Washington, DC.
Solubilization of Lignocellulosic Materials.
Patent Application,
Youn Woo Han, Eivind B. Lillehoj, and Alex Ciegler. Filed 25 Aug 80, 13p PB81-129405
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The solubilization of lignocellulosic fibrous material is accomplished by a simple and expedient process consisting of impregnating the selected lignocellulosic material with one of a group of certain swelling agents, allowing a sufficient amount of time until the desired degree of swelling is achieved, then subjecting the swollen fibers to irradiation from a gamma radiation source.

PATENT-4 182 398
Not available NTIS
Department of Energy, Washington, DC.
Crosslinked Crystalline Polymer and Methods for Cooling and Heating.
Patent,
I. O. Salyer, R. A. Botham, and G. L. Ball, III. Filed 4 Apr 77, patented 8 Jan 80, 16p PAT-APPL-784 488
Supersedes PAT-APPL-784 488-77.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

The invention relates to crystalline polyethylene pieces having optimum crosslinking for use in storage and recovery of heat, and it further relates to methods for storage and recovery of heat using crystalline polymer pieces having optimum crosslinking for these uses. Crystalline polymer pieces are described which retain at least 70% of the heat of fusion of the uncrosslinked crystalline polymer and yet are sufficiently crosslinked for the pieces not to stick together upon being cycled above and below the melting point of the polymer, preferably at least 80% of the heat of fusion with no substantial sticking together. 14 claims. (ERA citation 06:002683)

PB81-122715 Not available NTIS
Southern Research Inst., Birmingham, AL.
Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
Journal article,
Jack R. McDonald, Marlin H. Anderson, Ronald B. Mosley, and Lesile E. Sparks. c1980, 14p
EPA-600/J-80-091, IERL-RTP-P-304
Contract EPA-68-02-2610
Pub. in Jnl. of Applied Physics 51(7) Jul 80.

The paper reports measurements of charge values on individual particles exiting three different laboratory electrostatic precipitators (ESPs) in an experimental apparatus containing a Millikan cell. Dioctylphthalate (DOP) droplets and fly ash particles were measured at temperatures from 23 to 343 C. At comparable voltages and currents for positive and negative coronas, the data show that the ratio of the values of negative-to-positive charge for radii in the range 0.6-1.3 micrometers increases from about 1 to 2 as the temperature increases from 37 to 343 C. Predictions of a mathematical model of ESP using an ionic charging theory show good agreement with all positive charging data, but show good agreement with negative charging data only at temperatures below 37 C. The differences in the measurements and the model predictions are consistent with the postulation of free electron charging at elevated temperatures in negative corona. (Copyright (c) 1980 American Institute of Physics.)

PB81-125171 PC **A02**/MF **A01**
Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, Delft (Netherlands).
Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope),
J. Tempelman. Jul 76, 11p F-1535
Text in Dutch.

In short is described an analysis method for asbestos fibers with the help of a transmission electron microscope. The fibers can be identified separately with the help of energy dispersive X-ray fluorescent analysis and electron diffraction. By counting and measuring the fibers from photographs is the amount of asbestos determined.

PB81-125189 PC **A02**/MF **A01**
Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, Delft (Netherlands).
Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
A. W. Hoogereen. Feb 76, 17p G-606
Text in Dutch.

The purpose of this research is to develop a sensitive and good reproducible determination method for carbon monoxide. A sample of air is directed over a distillation column of molecular sieve, and then directed over a nickel catalyzer. On this nickel catalyzer, CO is transferred into methane in a hydrogen environment. By means of a flame ionization detector, the concentrations of methane and the into methane transferred carbon dioxide are determined.

PB81-126070 Not available NTIS
National Bureau of Standards, Washington, DC.
Calculations of Electron Beam Spreading in Composite Thin Foil Targets,
D. E. Newbury, and R. L. Myklebust. 1980, 3p
Pub. in Proceedings of Annual Conference of the Microbeam Analysis Society (1980), Reno, NV., August 4-8, 1980, Paper in Microbeam Analysis, p173-175 1980.

Electron beam spreading limits the spatial resolution of analysis in thin foils by analytical electron microscopy. The interpretation of recent experimental evidence which suggests that beam spreading is not as severe as previously predicted by electron scattering models is shown to be in error. The experiment in question involved measurement of a thin slab of material in a matrix. Adaptation of a simple model for scattering to this specimen configuration gives a closer agreement to the observed experimental signal profiles. Exact calculations of the configuration with a Monte Carlo electron trajectory simulation give close agreement with the experimental profiles. It is further demonstrated that beam spreading can produce errors of a factor of two or more in the apparent concentration when the object of interest is smaller than the interaction volume.

PB81-126120 Not available NTIS
National Bureau of Standards, Washington, DC.
Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
R. A. Fletcher, D. S. Bright, and I. Chabay. 1980, 4p
Pub. in Jnl. Physical Chemistry 84, n12 p1611-1614 1980.

The generation of uniform fluid flow by gravitationally settling 5-15 micrometers diameter aerosol has been observed. The magnitude of the flow phenomena is derived from measurements of the particle settling velocities using the optical particle Doppler shift spectrometer (PDSS) which can determine particle velocity and size with high accuracy due to the inherent internal calibration characteristic of the instrument. The fluid flow velocity is dependent on the particle number concentration. Experimental evidence verifying the flow pattern is presented.

PB81-126138 Not available NTIS
National Bureau of Standards, Washington, DC.
Some Experimental Problems in the Raman Analysis of Microsamples,
J. J. Blaha, and E. S. Etz. 1980, 2p
Pub. in Proceedings of the Microbeam Analysis Society Conference (15th), San Francisco, CA., August 4-8, 1980, Paper in Microbeam Analysis, p183-184 1980.

The Raman microprobe, developed at the National Bureau of Standards, has been shown to be an effective tool for the analysis of microsamples. Some of the more common problems in analyzing samples arise from excessive heating of the sample when the laser beam is absorbed and the sample is not able to dissipate the excess energy. Common methods of circumventing these problems are to decrease the laser power in the sample or change the frequency of the exciting laser beam. These are not always successful. Chemical reactions of microsamples, especially with water vapor, also complicate the analysis. In these cases, special sample handling is necessary. A number of other techniques have been utilized to protect samples from adverse effects of the measurement process. These are expected to aid in further analyses of microsamples.

PB81-126153 Not available NTIS
National Bureau of Standards, Washington, DC.
Statistical Thermodynamics of Bulk and Surface Properties of Polymer Mixtures,
I. C. Sanchez. 1980, 25p
Pub. in Jnl. Macromol. Sci.-Phys. B17, n3 p565-589 1980.

A generalized version of the lattice fluid theory of solutions is considered. Necessary and sufficient conditions for phase stability in a binary mixture are defined by a spinodal inequality. From the general properties of the spinodal, the necessary conditions for polymer/polymer miscibility and bimodal behavior of the spinodal are defined. A general theory of interfacial tension in phase separated multi-component mixtures is formulated. The interfacial tension theory can be combined with lattice fluid theory to obtain a unified theory of bulk and interfacial properties.

PB81-126161 Not available NTIS
National Bureau of Standards, Washington, DC.
Surface Tension Theory of Pure Liquids and Polymer Melts,
C. I. Poser, and I. C. Sanchez. May 79, 10p
Pub. in Jnl. Colloid Interface Science 69, n3 p539-548 May 79.

Using the lattice fluid model in conjunction with the Cahn-Hilliard theory of inhomogeneous systems, an accurate method has been developed for calculating the surface tension of nonpolar and slightly polar liquids of arbitrary molecular weight. For

low molecular weight liquids, the surface tension can be computed from the triple point to 0.7 of the gas-liquid critical temperature with an error of less than 5%. The theory is somewhat less accurate for polymer melts because it tends to overestimate the surface entropy. The molecular weight dependence of the surface tension and entropy is closely related to the dependence of liquid density on molecular weight.

PB81-126187 Not available NTIS
National Bureau of Standards, Washington, DC.
The Lowest Laser-Raman Active Accordion (ALR) Type Oscillations in Crystalline Polymers.
A. Peterlin. 1979, 5p
Pub. in Jnl. Mater. Sci. 14, p2994-2998 1979.

The longitudinal accordion-type mode (LAM) frequencies of crystals of linear polymers with the chains perpendicular to the lamella surface are imagined as corresponding to the longitudinal eigenfrequencies of an ideally elastic rod of length D having the maximum amplitude at its ends.

PB81-126195 Not available NTIS
National Bureau of Standards, Washington, DC.
Configurational Properties of Star-Branched Polymers,
J. Mazur, and F. McCrackin. 1977, 7p
Pub. in Macromolecules 10, n2 p326-332 Mar-Apr 77.

Mean-square radii of gyration were computed for star-branched polymers simulated by a lattice model that incorporated both excluded volume and attractive energies between nonbonded segments of the polymer. The ratios, g, of the radius of gyration of a star polymer to that of a linear polymer of the same molecular weight were 6 to 15% (for star polymers of 3 to 9 branches) greater at the theta point than the corresponding ratios calculated by the unrestricted random-walk model of the polymer. The g ratios were smaller in good solvents than in theta solvents. The expansion factors, the ratios of the radius of gyration of a molecule in a good solvent to its radius of gyration in a theta solvent, were also calculated. The expansion factor decreased with the degree of branching, which is at variance with perturbation theory applied to the random walk model of star-branched polymers.

PB81-126211 Not available NTIS
National Bureau of Standards, Washington, DC.
Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
D. N. Misra, R. L. Bowen, J. M. Antonucci, and W. F. Cuthrell. Sep 79, 8p
Pub. in Jnl. Colloid Interface Science 77, n1 p143-150 Sep 79.

Adsorption of a polyfunctional surface-active amine polymerization accelerator ('PolySAM-1') from chloroform solutions on synthetic hydroxyapatite is exhaustive and completely irreversible from very dilute solutions. The adsorption is irreversible until the formation of a 'monomolecular layer,' at which point the additional adsorption is reversible. At relatively low equilibrium concentrations the adsorption is not exhaustive and the isotherm is linear. Adsorption isotherms of the adsorbate which is reversibly bound and of the adsorbate on a hydroxyapatite sample containing a preadsorbed monolayer of the same are identical and follow the Langmuir plot. Evidence shows that the irreversibly adsorbed material is probably chemisorbed. The tensile strength of a polymer, filled with synthetic hydroxyapatite having an adsorbed monolayer of PolySAM-1, did not exceed that of the polymer filled with untreated apatite for any of the polymerization-initiating systems that were studied. This implies that tertiary aromatic amine accelerators of this type do not form free radical sites capable of initiating or terminating significant graft polymerization under these conditions after their reaction with benzoyl peroxide.

PB81-126369 PC **A06**/MF **A01**
British Columbia Research Council, Vancouver.
Development of a Chemical Toxicity Assay for Pulp Mill Effluents.
Final rept. 1 Mar 79-31 Aug 80,
J. M. Leach, and L. T. K. Chung. Dec 80, 105p
EPA-600/2-80-206
Grant EPA-R-804977-01

A chemical analysis procedure was developed to measure within 1.5 hours compounds responsible for the toxicity of pulp mill effluents to fish. Analytical results for 113 samples of raw and biologically-treated bleached and unbleached kraft, sulphite and groundwood effluents were converted via toxic units into estimates of acute lethal toxicity. Agreement between 96-h median lethal concentrations calculated by this method, and values from bioassays of the effluents using rainbow trout was within 30% for 73% of the samples examined. Biological treatment was highly effective in removing the known toxic compounds at pulp mills on the Willamette River, OR. and the Androscoggin River, NH. and ME., based on estimates of toxicant loadings into and out of the biobasins.

PB81-129470 PC **A02**/MF **A01**
Environmental Research Lab., Athens, GA.
Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
Journal article,
Samuel W. Karickhoff. 1980, 14p EPA-600/J-80-105
Pub. in Contaminants and Sediments, v2 p193-205 1980.

The sorption kinetics of pyrene and phenanthrene in well-stirred sediment suspensions can be resolved into two time segments. The first is rapid (limited primarily by mixing) and presumably involves sorption to surface sites directly accessible to the bulk water phase. The second sorptive process involves sites accessed by a much slower mechanism. Desorption (starting with the chemical in the sorbed state) was found to be a reversal of the adsorption process, with temporal resolution of two phases. The rate of the long-time desorptive step tended to be slightly slower than the adsorptive complement.

PB81-851602 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Hydrocracking. January, 1970-October, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 150p
NERACUSGNT1831
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on hydrocracking processes for organic and inorganic materials with various catalysts. Hydrocracking of organic and inorganic residues are also included. (Contains 122 citations.)

PB81-851610 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Hydrocracking. January, 1976-October, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Oct 80,
Walter Van Put. Oct 80, 205p
NERACEDBNT1831
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on hydrocracking processes for organic and inorganic materials with various catalysts. Hydrocracking of organic and inorganic residues are also included. (Contains 200 citations.)

PB81-851628 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Hydrocracking. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 209p NERACEI NT1831
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on hydrocracking processes for organic and inorganic materials with various catalysts. Hydrocracking of organic and inorganic residues are also included. (Contains 200 citations.)

PB81-855306 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Ion Exchange Resins. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Lawrence H. Marcus. Jun 80, 243p NERACEI NT0395
Sponsored by National Technical Information Service, Springfield, VA.

In this bibliography from worldwide literature, reports are cited which deal with the preparation, properties and applications of ion exchange resins, including their utilization in water and waste treatment, in chemical reactions, as catalysts, in ore treatment and recovery, in desalination and in various recovery, purification, and separation processes. The regeneration of the resins is also discussed. (Contains 183 citations.)

7E. Radio and Radiation Chemistry

AD-A091 973/8 PC **A03**/MF **A01**
Texas Univ. at Austin. Dept. of Chemistry.
The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
Technical rept.,
Ikuichiro Izumi, Fu-Ren F. Fan, and Allen J. Bard. 29 Oct 80, 35p Rept no. TR-14
Contract N00014-78-C-0592

The heterogeneous photocatalytic decomposition of adipic acid in deaerated aqueous solutions containing a suspension of platinized TiO2 (anatase) powder leads to the formation of CO2 and butane with lesser amounts of valeric acid and negligibly small quantities of oligomeric materials. A mechanism for this photo-Kolbe reaction, which yields different products than the electrochemical Kolbe reaction, is proposed. The photodecomposition of benzoic acid in oxygen-containing solution at platinized TiO2 was also investigated. The reaction product is predominantly CO2, with intermediate production of salicylic acid and phenol. A mechanism for the reaction based on photogeneration of hydroxyl radicals and adsorption of intermediates on the powder surface is proposed. (Author)

JINR-R-4-12671 PC **A02**/MF **A01**
Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Computing Techniques and Automation.
Calculation of Energy Levels of mu -Mesic Molecules of Hydrogen Isotopes Using a Continuous Analog of the Newton Method and Subspace Iteration Method.
M. Kaschiev, and V. S. Melezhik. 1979, 11p
In Russian.
U.S. Sales Only.

All 22 binding energies of mu -mesic molecules of hydrogen isotopes are calculated in the adiabatic representation in the approximation of two and eight equations. These resutls are obtained by numerical solution of the Sturm-Liouville problem for the system of ordinary differential equations of the second order with the help of two computational algorithms-a continuous analog of the Newton method and subspace iteration method. The computational stability of these algorithms is shown in all the region of discrete spectrum, the boundary of continous spectrum included, and mutual control precision of two computational schemes has been carried out. For mesic molecules in dt/sub mu / states with quantum numbers J=1, v=0 and J=1, v=1 and energies e sub 10 231.370786 and e sub 11 =0.117342 tables of wave functions are given. (Atomindex citation 11:518982)

8. EARTH SCIENCES AND OCEANOGRAPHY

8A. Biological Oceanography

AD-A092 064/5 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Click Sounds from Animals at Sea.
Technical rept.,
William A. Watkins. Nov 80, 12p Rept nos. WHOI-80-48, WHOI-CONTRIB-4300
Contract N00014-74-C-0262
Pub. in Animal Sonar Systems, p291-297 1980.

No abstract available.

AD-A092 082/7 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Acoustics and the Behavior of Sperm Whales.
Technical rept.,
William A. Watkins. 1980, 12p Rept nos. WHOI-80-51, WHOI-CONTRIB-4252
Contract N00014-74-C-0262
Pub. in Animal Sonar Systems, p283-290 1980.

No abstract available.

AD-A092 326/8 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Migration Rate of Mud Bacteria as a Function of Magnetic Field Strength.
Technical rept.,
Barbara D. Teague, Michael Gilson, and Ad. J. Kalmijn. Nov 80, 6p Rept no. WHOI-80-54
Contract N0014-79-C-0071
Pub. in The Biological Bulletin, v157 n2 p399 Oct 79.

No abstract available.

AD-A092 465/4 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
A Projectile Point for Penetrating Whale Blubber.
Technical rept.,
William A. Watkins. 14 Dec 78, 17p Rept nos. WHOI-80-64, WHOI-CONTRIB-4260
Contract N00014-74-C-0262
Pub. in Deep-Sea Research, v26A p1301-1308 1979.

No abstract available.

PB81-120685
(Order as PB81-120677, PC **A03**/MF **A01**)
Fish and Wildlife Service, Seattle, WA.
Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
Gary A. Wedemeyer, Richard L. Saunders, and W. Craig Clarke. Jun 80, 15p NOAA-80101509-1
Included in Marine Fisheries Review, v42 n6 p1-14 Jun 80.

An important requirement in the efficient use of artificially propagated juveniles for salmon enhancement programs is that the resulting smolts be fully prepared behaviorally and physiologically to migrate to sea and continue to grow and develop normally. In this paper, physiological criteria for identifying fully functional smolts are presented and environmental factors are identified which will influence smoltification, and thus early marine survival. Guidelines are presented for management strategies to improve survival of Pacific, Oncorhynchus sp., and Atlantic salmon, Salmo salar, and anadromous (steelhead) rainbow trout, Salmo gairdneri.

PB81-120701
(Order as PB81-120677, PC **A03**/MF **A01**)
National Marine Fisheries Service, Seattle, WA. Northwest and Alaska Fisheries Center.
Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
Jerrel R. Harmon, and Donn L. Park. Jun 80, 5p NOAA-80101509-3
Included in Marine Fisheries Review, v42 n6 p25-28 Jun 80.

During the spring of 1978, the National Marine Fisheries Service, under contract to the U.S. Army Corps of Engineers, evaluated a new system for bypassing juvenile chinook salmon, Oncorhynchus tshawytscha, and steelhead trout, Salmo gairdneri, from turbine intakes at Little Goose Dam on the Snake River. The criteria pertaining to orifice size (8-, 10-, or 12-inch diameter); placement (north, south, or both); and lighting (on or off) were examined.

PB81-132094 PC **A07**/MF **A01**
Johns Hopkins Univ., Baltimore, MD. Chesapeake Bay Inst.
On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
Special rept.,
Leslie S. Kaufman, Robert G. Otto, and Paul E. Miller, Jr. Mar 80, 128p CBI/SR-78, REF-80-1
Sponsored in part by Maryland Dept. of Natural Resources, Annapolis. Power Plant Siting Program.

Twenty-eight species of fishes were caught by beach seine and semi-balloon trawl during a one-year study of juvenile fish distribution and abundance in the Upper Chesapeake Bay. The sampling areas encompassed four major kinds of shoreline habitat: marshy embayment, river mouth, open bay and point. Local distribution patterns of the fishes differed apparently in relation to differences in body form, tropic specializations and modes of reproduction.

PB81-134041 PC **A03**/MF **A01**
California Univ., San Diego, La Jolla. Sea Grant Coll. Program.
California's Salmon Resource - Its Biology, Use and Management.
Report series no. 3,
Lenore Feinberg, and Terri Morgan. 1980, 47p CSGCP-72, NOAA-80102701
Grant NOAA-04-M01-189

The biology and management of California's salmon resources are discussed along with the environment that sustains it and the history of its use. Information is given on the life cycles of coho and chinook salmon and the salmon fishery. Separate chapters deal with the human impact on the habitat; protection, restoration and enhancement (culturing salmon); views of a salmon hatchery; salmon management; and the salmon's future.

PB81-137689 PC **A99**/MF **A01**
Texas Univ. at Austin, Port Aransas. Marine Science Inst.
Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
Final rept.
1976, 625p BLM/YM/ES-76/8
Contract DI-08550-CT5-17
See also report dated 30 Sep 77, PB80-201726.

The purpose of this three-year study was to carry out detailed observations and measurements of the biology and chemistry of the South Texas Outer Continental Shelf. This study was ordered so as to include a broad survey in terms of the number of stations and the frequency of sampling.

8B. Cartography

AD-A092 001/7 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
Technical rept.,
Philip L. Richardson. 28 Aug 79, 9p Rept nos. WHOI-80-45, WHOI-CONTRIB-4421
Contract N00014-74-C-0262
Pub. in Science, v207 p643-645, 8 Feb 80.

No abstract available.

AD-A092 110/6 PC **A03**/MF **A01**
Coastal Engineering Research Center, Fort Belvoir, VA.
Experimental Dune Restoration and Stabilization, Nauset Beach, Cape Cod, Massachusetts.
Technical paper,
Paul L. Knutson. Aug 80, 45p Rept no. CERC-TP-80-5

In April 1970, experimental plots were established on a baymouth bar at Nauset Harbor on Cape Cod, Massachusetts. On the bar both sand fences and American beachgrass (Ammophila breviligulata) were tested as alternative techniques for creating and stabilizing dunes. Elevational profiles were made periodically in the test plots from April 1970 to November 1977. The study concluded that sand fences initially capture sand more rapidly than newly planted beachgrass. Once established, however, beachgrass plantings trap sand at a rate equivalent to multiple lifts of sand fence. Using either sand fence or beachgrass, a dune growth rate of more than 11 cubic meters per linear meter of beach per year was sustained. Crest elevation increased 0.25 meter per year. (Author)

AD-893 054/7 PC **A10**/MF **A01**
Raytheon CO/Autometric Wayland Mass
Photo-Carto Interface.
Final technical rept. Sep 70-Dec 71,
Eldon Sewell. Feb 72, 211p FR-71-3428, RADC-TR-72-33
Contract F30602-71-C-0031
Distribution limitation now removed.

The basic requirements for a capability to integrate photogrammetric and cartographic digital information are identified and discussed. The total Photo-Carto System and its component elements are described along with the data processing functions associated with each stage of data development. The Photo-Carto Interface computer programs are present in four basic functional blocks consisting of: The Digital Terrain Model Generator; the Digital Photographic Feature Generator; Single Camera Resector, and the Photographic Features Rectifier. A description of the experimental verification of the Photo-Carto Interface capabilities and a sample graphic are included in the main report. Appendix B is a Users' Manual for the operating programs. (Author)

AD-893 139/6 PC **A05**/MF **A01**
PRC Information Sciences Co., McLean, VA.
Expanded Phase I ACS Experiments. Volume I. Experimental System Testing and Evaluation.
Final technical rept. Aug 70-Sep 71,
M. Lynn Taylor. Feb 72, 98p PRC-R-1577-Vol-1, RADC-TR-72-19-Vol-1
Contract F30602-71-C-0018
See also Volume 2, AD-893 140L.
Distribution limitation now removed.

The objective of the 'Expanded Phase I ACS Experiments' project was to obtain a complete set of detailed design requirements for a prototype configuration of the Cartographic Finishing Subsystem of the Advanced Cartographic System. Volume I of the two-volume final report presents the testing program and evaluation of the experimental system. (Author)

AD-893 140/4 PC **A03**/MF **A01**
PRC Information Sciences Co., McLean, VA.
Expanded Phase I ACS Experiments. Volume II. Design Requirements for a Prototype Cartographic Finishing Subsystem.
Final technical rept. Aug 70-Sep 71,
M. Lynn Taylor, and G. J. Graklanoff. Feb 72, 45p PRC-R-1577-Vol-2, RADC-TR-72-19-Vol-2
Contract F30602-71-C-0018
See also Volume 1, AD-893 139L.
Distribution limitation now removed.

The objective of the 'Expanded Phase I ACS Experiments' project was to obtain a complete set of detailed design requirements for a prototype configuration of the Cartographic Finishing Subsystem

of the Advanced Cartographic System. Volume II presents a system description and hardware and software design requirements of the proposed prototype Cartographic Finishing Subsystem. (Author)

AD-900 360/9 PC **A06**/MF **A01**
Bendix Research Labs Southfield Mich Digital Systems and Techniques Dept
AS-11/B Stereoplotter Experiments and Studies.
Final technical rept. Jul 70-Jan 72,
James O. Abshier, and Henry L. Ohlef. Apr 72, 122p 6169, RADC-TR-72-94
Contract F30602-70-C-0256
Distribution limitation now removed.

A study was made of the utility of the automated analytical stereoplotter in the generation of advanced cartographic products such as obscuration charts, radar predictions, terrain elevation grids, and off-line orthophotos. Although both on-line and off-line methods were investigated, emphasis was placed on methods which use the stereoplotter system in an on-line manner to directly generate the cartographic product. A computer program was developed for the AS-11B automated analytical stereoplotter system to generate obscuration charts. In this study, methods were developed for generating the various cartographic products using the automated analytical stereoplotter system. Experiments were performed to automatically measure and determine the quality of pass-points. Pass-point data was automatically measured and recorded on magnetic tape using the AS-11B automated analytical stereoplotter system. This data was then analyzed off-line on a GE-645 computer system. From the pass-point data, a figure-of-merit was computed for each pass-point. This figure-of-merit indicated the quality of the recorded pass-points. (Author)

PB81-127300 PC **A05**/MF **A01**
Ohio State Univ., Columbus. Engineering Experiment Station.
Applied Research in Analytical Photogrammetry.
Final rept.,
Dean C. Merchant. May 80, 84p EES-304, FHWA/OH-80/005
Sponsored in part by Ohio Dept. of Transportation, Columbus.

This report pertains to research conducted in the applications of large scale analytical aerial photogrammetry to surveying for transportation systems. A demonstration of the improvement in accuracies of measurement of terrain elevation after special calibration is presented. New specialized hardware interfaced with a simple micro-computer for measurement of cross-sections is discussed and its performance is presented. An improved version of a field deployable comparator is also discussed. Recommendations are made for improvement of the calibration procedure, the cross-section digitizer, the comparator and for implementation of results of this research.

8C. Dynamic Oceanography

AD-A091 913/4 PC **A10**/MF **A01**
South Carolina Univ., Columbia. Coastal Research Div.
Influence of Wave Refraction on Coastal Geomorphology-Bull Island to Isle of Palms, South Carolina.
Technical rept.,
Cary Fico. Dec 78, 203p TR-17-CRD, ARO-13237.15-GS
Grant DAAG29-76-G-0111

In order to determine the effects of the continental shelf bathymetry on coastal geomorphology, a series of wave-refraction diagrams were generated for the S. C. coast from Bull Island to the Isle of Palms. REFRAC, a computerized wave-refraction program developed for this study, generates refraction diagrams which delineate the patterns of longshore variation in wave energy. A variety of input wave conditions were used in REFRAC to model the various possible wave conditions existing in nature. The results indicate that the offshore bathymetry does partially control the coastal geomorphology by creating zones of potential erosion and deposition and by influencing the direction of sediment transport. (Author)

AD-A091 937/3 PC **A08**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Seasonal Variability in the Intermediate Waters of the Eastern North Atlantic.
Doctoral thesis,
Nancy Amanda Bray. Nov 80, 171p Rept no. WHOI-80-43
Contract N00014-76-C-0197

Observational evidence of seasonal variability below the main thermocline in the eastern North Atlantic is described, and a theoretical model of oceanic response to seasonally varying windstress forcing is constructed to assist in the interpretation of the observations. The observations are historical conductivity-temperature-depth data from the Bay of Biscay region (2 deg to 20 deg W, 42 deg to 52 deg N), a series of eleven cruises over the three years 1972 through 1974, spaced approximately three months apart. Analysis of the observations uses a new technique for identifying the adiabatically leveled density field corresponding to the observed density field. The distribution of salinity anomaly along the leveled surfaces is examined, as are the vertical displacements of observed density surfaces from the leveled reference surfaces, and the available potential energy. Seasonal variations in salinity anomaly and vertical displacement occur as westward propagating disturbances with zonal wavelength 390 (+ or - 50) km, phase 71 (+ or - 30) days from 1 January, and maximum amplitudes of + or - 30 ppm and + or - 20 ub respectively. The leveled density field varies seasonally with an amplitude corresponding to a thermocline displacement of + or - 15 db. The observations are consistent with predictions of a model in which an ocean of variable stratification with a surface mixed layer and an eastern boundary is forced by seasonal changes in a sinusoidal windstress pattern, when windstress parameters calculated from the observations of Bunder and Worthington are applied.

AD-A091 999/3 PC **A03**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Current System South and East of the Grand Banks of Newfoundland.
Technical rept.,
R. Allyn Clarke, Harry W. Hill, Robert F. Reiniger, and Bruce A. Warren. 12 Mar 79, 47p Rept nos. WHOI-80-47, WHOI-CONTRIB-4199
Contracts N00014-66-C-0241, N00014-74-C-0262
Pub. in Jnl. of Physical Oceanography, v10 n1 p25-65 Jan 80.

No abstract available.

AD-A092 045/4 PC **A02**/MF **A01**
Coastal Engineering Research Center, Fort Belvoir, VA.
Sand Motion Initiation by Water Waves: Two Asymptotes,
Robert J. Hallermeier. 29 Oct 79, 22p Rept no. CERC-REPRINT-80-3
Pub. in Jnl. of the Waterway Port Coastal and Ocean Div., Proceedings of the American Society of Civil Engineers, v106 nWW3 p299-318 Aug 80.

No abstract available.

AD-A092 047/0 PC **A02**/MF **A01**
California Univ., San Diego, La Jolla. Inst. of Geophysics and Planetary Physics.
Guided Solitary Waves,
John W. Miles. 28 Dec 79, 9p
Contract N00014-76-C-0025
Pub. in Proceedings of the National Academy of Sciences, v77 n4 p1723-1724 Apr 80.

No abstract available.

AD-A092 080/1 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA. Dept. of Physical Oceanography.
Geostrophic Vorticity Balance in Midocean.
Technical rept.,
Harry L. Bryden. 10 Apr 79, 9p Rept nos. WHOI-80-49, WHOI-CONTRIB-4223
Contract N00014-76-C-0197, Grant NSF-OCE77-19403
Pub. in Jnl. of Geophysical Research, v85 nC5 p2825-2828, 20 May 80. Sponsored in part by Grant NSF-OCE77-22887.

No abstract available.

AD-A092 115/5 Not available NTIS
South Carolina Univ., Columbia. Coastal Research Div.
General Morphology and Sediment Patterns in Tidal Inlets,
Miles O. Hayes. 14 Aug 79, 19p ARO-13237.8-GS
Contract N60921-73-C-0258, Grant DAAG29-76-G-0111
Sponsored in part by Contracts NOAA-03-5-022-82 and NOAA-04-6-148-44096.
Availability: Pub. in Sedimentary Geology, v26 p139-156 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 324/3 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Eddies Off the Somali Coast During the Southwest Monsoon.
Technical rept.,
J. G. Bruce. 7 May 79, 12p Rept nos. WHOI-80-58, WHOI-CONTRIB-4303
Contract N00014-74-C-0262
Pub. in Jnl. of Geophysical Research, v84 nC12 p7742-7748, 20 Dec 79.

No abstract available.

AD-A092 325/0 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Flow Structures of the Benthic Ocean.
Technical rept.,
Laurence Armi, and Eric D'Asaro. 17 Jul 79, 23p Rept nos. WHOI-80-59, WHOI-CONTRIB-4359
Contract N00014-76-C-0197, Grant NSF-OCE76-81190
Pub. in Jnl. of Geophysical Research, v85 nC1 p469-484, 20 Jan 80.

No abstract available.

AD-A092 327/6 PC **A03**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.
Technical rept.,
M. C. Gregg, and Melbourne G. Briscoe. 1979, 31p Rept nos. WHOI-80-55, WHOI-CONTRIB-4340
Contracts N00014-76-C-0197, N00014-75-C-0502
Pub. in Reviews of Geophysics and Space Physics, v17 n7 p1524-1548 Oct 79. Sponsored in part by Grant NSF-OCE77-25803.

No abstract available.

AD-A092 424/1 MF **A01**
JAYCOR, Woburn, MA.
A Comparison Study and Software Implementation of NORDA Ocean Models.
Final rept. 6 Aug 79-5 May 80,
Liang-Bee Lin. 8 Oct 80, 43p Rept no. JAYCOR-PSD-200-80-008FR
Contract N00014-79-C-0874
Availability: Microfiche copies only.

During the course of this research, three technical areas have been addressed: (i) eddy-meanflow energetics, (ii) model extension to irregular geometries, and (iii) flows around seamounts. In the first area, three models have been developed to study eddy-meanflow energetics in ocean circulation. The formulation of these models is unique and it is felt that they are the first truly applicable to regional energetics. Similarly, NORDA modeling capabilities have been considerably extended by permitting the modelling of irregular ocean basins. This extension from simple rectangular geometries has greatly improved the realism of the model and its behavior. The seamount studies are specifically directed at an examination of measured circulation perturbations near a seamount topography and a comparison with predicted patterns. These com-

parisons provide data on model ability to predict patterns. These comparisons provided data on model ability to predict flow fields and also on the accuracy of predictions.

AD-A092 464/7 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Critical Layers and the Garrett-Munk Spectrum.
Technical rept.,
Barry Ruddick. 26 Apr 79, 18p Rept nos. WHOI-80-62, WHOI-CONTRIB-4326
Contract N00014-76-C-0197
Pub. in Jnl. of Marine Research, v38 n1 p135-145 1980.

No abstract available.

AD-A092 483/7 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
Technical rept.,
P. L. Richardson, C. Maillard, and T. B. Sanford. 22 Mar 79, 20p Rept nos. WHOI-80-65, WHOI-CONTRIB-4339
Contract N00014-74-C-0262, Grant NSF-OCE76-82059
Pub. in Jnl. of Geophysical Research, v84 nC12 p7727-7741, 20 Dec 79. Sponsored in part by Grants NSF-DES74-02783 and NSF-OCE76-24605.

No abstract available.

AD-A092 485/2 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
Technical rept.,
William J. Schmitz, Jr., and W. Brechner Owens. 30 Mar 79, 10p Rept nos. WHOI-80-56, WHOI-CONTRIB-4341
Contract N00014-76-C-0197, Grant NSF-OCE75-03962

No abstract available.

PB81-120719
(Order as PB81-120677, PC **A03**/MF **A01**)
National Oceanic and Atmospheric Administration, Seattle, WA. Pacific Marine Environmental Lab.
Recent Observations of a Large Eddy in the Gulf of Alaska,
R. K. Reed. Jun 80, 4p CONTRIB-418, NOAA-80101509-4
Included in Marine Fisheries Review, v42 n6 p29-31 Jun 80.

Data in September 1978 revealed an intense clockwise eddy in the Gulf of Alaska which appeared to form as a result of vorticity conservation in the flow near Pratt Seamount. The existence of many large seamounts in this region suggests that well-developed eddies may be common. These circulation features are important to resource assessment because the movement of food organisms may be modified.

PB81-127490 PC **A07**/MF **A01**
National Oceanic and Atmospheric Administration, Boulder, CO. Wave Propagation Lab.
HF (High Frequency) Radar Measurements of Circulation in the Eastern Strait of Juan de Fuca Near Protection Island (July, 1979).
Final rept.,
Shelby Frisch. Jun 80, 143p EPA-600/7-80-129

During July 1979 the surface currents in the Eastern Strait of Juan de Fuca were mapped with a High Frequency (HF) radar system (CODAR). These currents were measured simultaneously over several hundred square kilometers continuously for five days. The strong tidal currents and estuarine flow dominated the circulation during most of this period of time, while the relatively weak winds seemed to play a minor role. The radar sites were selected to provide Ocean current information along the proposed pipelines.

PB81-851354 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Ocean Wave Spectra. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Sep 80,
John H. Frey. Oct 80, 48p NERACIAANT1865
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning measuring instruments and measurement techniques for spectral analysis of ocean waves, as well as mathematical and computer modeling of ocean wave dynamics. It also considers the response of ocean structures and ocean equipment to ocean waves. (Contains 91 citations.)

8F. Geography

PB81-133134 PC **A03**
Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.
Biotic Communities of the Southwest.
Forest Service general technical rept. (Final),
David E. Brown, and Charles H. Lowe. 1980, 37p FSGTR/RM-78
Color illustrations reproduced in black and white.

The report is a 48- by 60-inch color map of New Mexico, Arizona, southern California and Nevada, and northern Mexico, showing 5 formations, 22 biotic communities, 6 communities, major political divisions, rivers, cities, roads, and mountain ranges.

8G. Geology and Mineralogy

AD-A091 967/0 PC **A02**/MF **A01**
Lamont-Doherty Geological Observatory, Palisades, NY.
Aragonite from Deep Sea Ultramafic Rocks.
Journal article,
E. Bonatti, J. R. Lawrence, P. R. Hamlyn, and D. Breger. 30 Oct 79, 10p Rept no. LDGO-2992
Contract N00014-75-C-0210, Grant NSF-OCE78-19453
Pub. in Geochimica et Cosmochimica Acta, v44 p1207-1214 1980.

No abstract available.

AD-A092 274/0 PC **A03**/MF **A01**
Weidlinger Associates, New York.
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
Final rept. 20 Oct 76-30 Jun 80,
Ivan S. Sandler, and David Rubin. 30 Jun 80, 44p DNA-5253F
Contract DNA001-77-C-0035

Cementation breakdown has been modeled and its influence on the single burst ground motion in a representative MX geology has been assessed. Its effect is confined to a late-time signal and even for the extreme models assumed it does not appear to be a significant factor in predicting peak values or frequency content. The pore-air effect has also been modeled and its influence in both the high explosive (HE) and nuclear multiple burst environments have been computed. For the high explosive case there is a low frequency motion that does appear to be associated with the pore-air effect. This motion would not be predicted by superposition. For the nuclear case, the pore-air effect is small enough that superposition does seem to be approximately satisfied. (Author)

AD-A092 508/1 PC **A02**/MF **A01**
Lamont-Doherty Geological Observatory, Palisades, NY.
Planktonic Microfossils and the Recognition of Ancestors.
Journal article,
D. R. Prothero, and D. B. Lazarus. Feb 80, 13p Rept no. LDGO-3025
Contract N00014-75-C-0210
Pub. in Systematic Zoology, v29 n2 p119-129 1980.

No abstract available.

CBPF-A0008/79 PC **A02**/MF **A01**
Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro.
Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
J. Danon, R. B. Scorzelli, I. S. Azevedo, J. F. Albertsen, and J. M. Knudsen. 1979, 4p
U.S. Sales Only.

The presence of ordered phase Fe-Ni with superstructure L10 has been detected in Josephine by Moessbauer spectroscopy. (Atomindex citation 11:519105)

DOE/ET/10159-T1 PC **A02**/MF **A01**
North Carolina Univ. at Chapel Hill. Dept. of Geology.
Peat Resources of North Carolina. Quarterly Progress Report.
R. L. Ingram, and L. J. Otte. 1 Jul 80, 6p
Contract AC01-78ET10159

Although the work on North Carolina peat deposits is far from complete, a preliminary estimate of the amount of peat was made. Table 1 has the listing of all three types of deposits, Pocosin, River Flood Plain and Carolina Bays, and their description such as area, weight, thickness and quality estimation. Work on the peats of Light Ground Pocosin has been completed and the final report will be distributed soon. Work is continuing on the three largest Pocosin deposits; East Dismal Swamp (Dare Peninsula), Dismal Swamp, and Croatan Forest. As for river deposits, reconnaissance work indicates that peat is to be found along the lower floodplains of the Chowan, Roanoke, and Cape Fear Rivers. The quality (ash content) is much more variable than for the pocosin peats. There are approximately 2100 Carolina Bays deposits, over 800 ft long. A map is provided showing their distribution. Preliminary work shows that most of these bays contain good peat up to a maximum thickness of 15 ft. (ERA citation 06:000133)

DOE/ET/10159-T3 PC **A02**/MF **A01**
UOP, Inc., McLean, VA.
First Technical Contractors' Conference on Peat. Final Report.
R. L. Ingram, and L. J. Otte. 1980, 19p
Contract AC01-78ET10159

This inventory of the peat resources of North Carolina is being made as part of the Department of Energy's inventory of the peat resources of the United States. Peat deposits in North Carolina are of three main geologic types representing the accumulation of organic matter in: Pocosin, broad shallow depressions on uplifted sea floors; River Floodplains; and Carolina Bays, elliptical depressions of unknown origin, perhaps meteorite scars. As the largest peat deposits probably occur in pocosins, most of the work has been concentrated in these deposits. Table 1 summarizes the work accomplished. The various deposits of Pocosin, River Floodplain, Carolina Bays, along with their area, maximum thickness, modal thickness and number of exploratory holes are listed in this table. About 120 proximate and ultimate analyses have been made of North Carolina peats that allow the general nature of these peats to be described. Scatter diagrams of the relation of various properties of peat to the ash content are shown in Figures 3 to 11. These properties are, percentages of water, volatiles, fixed carbon, carbon, hydrogen, and oxygen, and Btu/lb. Table 2 summarizes the composition and heating values of the peats analyzed. The immediate goal is to complete the inventory of the pocosin peat deposits. (ERA citation 06:000135)

DOE/ID/12079-15 PC **A04**/MF **A01**
Utah Univ. Research Inst., Salt Lake City. Earth Science Lab.
Bipole-Dipole Survey at Roosevelt Hot Springs, Thermal Area, Beaver County, Utah.
W. Frangos, and S. H. Ward. Sep 80, 65p ESL-43
Contract AC07-79ID12079

A bipole-dipole electrical resistivity survey at Roosevelt Hot Springs thermal area, Beaver County, Utah was undertaken to evaluate the technique in a well-studied Basin and Range geothermal prospect. The major electrical characteristics of the area are clearly revealed but are not particularly descriptive of the geothermal system. More subtle variations of electrical resistivity accompanying the geothermal activity are detectable, although the influence of near-surface lateral resistivity variations imposes upon the survey design the necessity of a high station density. A useful practical step is to conduct a survey using transmitter locations and orientations which minimize the response of known features such as the resistivity boundary due to a range front fault. Survey results illustrate the effects of transmitter orientation and placement, and of subtle lateral resistivity variations. A known near-surface conductive zone is detected while no evidence is found for a deep conductive region. (ERA citation 06:000584)

DOE/ID/12079-8 PC **A05**/MF **A01**
Utah Univ. Research Inst., Salt Lake City. Earth Science Lab.
Geology of the Colado Geothermal Area, Pershing County, Nevada.
B. S. Sibbett, and M. J. Bullett. Jul 80, 79p ESL-38
Contract AC07-79ID12079

The Colado geothermal area in south-central Pershing County, Nevada is defined by hot water wells in alluvium just west of the West Humboldt Range. Geothermal gradient holes have encountered temperatures up to 113.5 exp 0 C at a depth of 76 m (250 ft) with a gradient reversal in the alluvium below this depth. The West Humboldt Range consists mainly of Triassic to Jurassic slaty shale to quartzite of the Auld Lang Syne Group. Carbonate rocks of the Jurassic Lovelock Formation have been thrust over pelitic rocks on the south end of the area. Erosional remnants of Tertiary tuffs and sediments overlay the metasediments in the West Humboldt Range. The principal structures are high-angle faults striking north-northwest, northeast and north-south. The horst-to-graben transition along the range front consists of several step faults trending irregularly north. The structural pattern in the west edge of the range probably continues to the west under the Quaterary alluvium where the source of the hot water is located. Thermal waters probably rise along a major fault intersection in the Mesozoic rocks then spread out in an aquifer in the alluvium. Several thrust faults are exposed south of Coal Canyon, and a structural break in the Mesozoic rock exists under the canyon. Several low-angle faults are present north of Coal Canyon but their effect, if any, on the geothermal occurrence is not known. (ERA citation 06:000575)

DOE/METC/SP-80/23 PC **A09**/MF **A01**
Department of Energy, Morgantown, WV. Morgantown Energy Technology Center.
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
R. L. Wheeler, and C. S. Dean. 6 Apr 78, 181p CONF-7804179-
Meeting of Southeastern Section of the Geological Society of America, Chattanooga, TN, USA, 6 Apr 1978.

The papers presented at a symposium on some geological aspects of the Appalachian forelands are compiled in this volume. The purpose of the symposium was to furnish results of recent work to contractors of the Eastern Gas Shales Project (EGSP) and to explorationists in general. The work summarized dealt with the fracture systems related to the detached (thin-skinned) structures, at or near the western limit of detachment in the Appalachian basin. Most papers focused on the fractured Devonian shale sequence which is the subject of EGSP's work. (ERA citation 06:000243)

PB81-130619 PC **A99**/MF **A01**
Smithsonian Institution, Washington, DC.
Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses),
N. A. Voloshinova, V. N. Kuznetsova, and L. S. Leonenko. 1979, 614p TT-76-53241
Trans. of Vsesoyuznyi Neftyanoi Nauchno-Issledovatel'skii Geologo-Razv dochnyi Institut, Trudy (USSR) n284 1970. Sponsored in part by National Science Foundation, Washington, DC. Special Foreign Currency Science Information Program.

The book is a monographic description of the foraminifera, having some stratigraphic distribution in the Neogene deposits of the Sakhalin. The book may be used by palaeonologists, studying foraminifera of the Meso-Cenozoic of the USSR and of the whhole Pacific region, and by geologists, working out detailed stratigraphic maps of the Cenozoic of various areas of the Far-Eastern region and Siberia.

PB81-130759 PC **A05**/MF **A01**
Institute of Gas Technology, Chicago, IL.
Gas Saturation in Formation Waters.
Annual rept. Mar 79-80,
Philip L. Randolph, Evelyn M. Rockar, and Terry L. Osif. May 80, 84p GRI-79/0051
Contract GRI-5011-321-0140

The purpose of this program is to increase our knowledge of the chemistry of formation waters from geopressured-geothermal reservoirs. A program of down-hole sampling, chemical analysis, and thermodynamic reconstruction was carried out.

PB81-132045 PC **A03**/MF **A01**
National Science Foundation, Washington, DC. Engineering and Applied Science.
Abstracts of Ongoing NSF Research Related to the Eruption of Mt. St. Helens.
1980, 33p
Proceedings of a Seminar/Workshop on Mt. St. Helens, Washington, DC., November 13-14, 1980.

The following abstracts describe ongoing research projects by the National Science Foundation. Topics covered include effects of ash fallout on streams and vegetation; ground-based thermal infrared surveys; volcanic gases; collection and analysis of ash; psychological impacts; effects of the eruption on migratory birds; and impact of ash fallout on below-ground ecosystem processes.

8H. Hydrology and Limnology

AD-A092 417/5 PC **A04**/MF **A01**
Naval Weapons Center, China Lake, CA.
Coso Monitoring Program.
Summary rept. Feb 78-Dec 79,
C. R. Rodgers, J. R. Neffew, K. J. Danti, and E. M. Edwards. Jul 80, 75p NWC-TP-6195, AD-E900 018
Original contains color plates: All DTIC and NTIS reproductions will be in black and white.

The Coso Monitoring Program is a continuing effort in support of the geothermal development of Coso, which is located within the boundaries of the Naval Weapons Center. Data are presented on the monitoring of steam flows, water levels in ponds and wells, water chemistry, temperature logs of shallow wells, and rainfall at the Coso Resort. A weekly photographic study of the mud pots is described showing the variation of fluid levels in the mud pots in the wet and dry seasons.

ORNL-5567 PC **A08**/MF **A01**
Oak Ridge National Lab., TN.
FEMWATER: A Finite-Element Model of Water Flow Through Saturated-Unsaturated Porous Media.
G. T. Yeh, and D. S. Ward. Oct 80, 162p
Contract W-7405-ENG-26

Upon examining the Water Movement Through Saturated-Unsaturated Porous Media: A Finite-Element Galerkin Model, it was felt that the model should be modified and expanded. The modification is made in calculating the flow field in a manner consistent with the finite element approach, in evaluating the moisture-content increasing rate within the region of interest, and in numerically computing the nonlinear terms. With these modifications, the flow field is continuous everywhere in the flow regime, including element boundaries and nodal points, and the mass loss through boundaries is much reduced. Expansion is made to include four additional numerical schemes which would be more appropriate for many situations. Also, to save computer storage, all arrays pertaining to the boundary condition information are compressed to smaller dimension, and to ease the treatment of different problems, all arrays are variably dimensioned in all subroutines. This report is intended to document these efforts. In addition, in the derivation of finite-element equations, matrix component representation is used, which is believed more readable than the matrix representation in its entirety. Two identical sample problems are simulated to show the difference between the original and revised models. (ERA citation 05:037746)

PB81-124141 PC **A02**/MF **A01**
Minnesota Univ., Minneapolis. Limnological Research Center.
A Trophic Classification of Minnesota Lakes Based on Lake Sediments.
Completion rept.,
H. E. Wright, Jr. Jul 80, 23p W81-00322, OWRT-B-128-MINN(1)
Contract DI-14-34-0001-7164

The lakes sampled were selected to be representative of the wide variety of Minnesota lake types. Sediments were sampled in each of 105 lakes in the deepest water. The surface sediment samples were analyzed for diatoms, and water samples from the same lakes were chemically analyzed. Correlation between the two series by cluster analysis provided the ecological basis for the use of diatom assemblages to classify lakes. Diatom analysis of lake sediment cores could then be used to reconstruct past lake conditions, and thus evaluate the changes in a lakes trophic status.

PB81-124448 PC **A10**/MF **A01**
Purdue Univ., Lafayette, IN. Water Resources Research Center.
Green River Basin Flow Forecasting Models.
Technical rept.,
P. G. Katz, and G. H. Toebes. Oct 80, 211p TR-136, W81-00329, OWRT-B-094-IND(4)

River flow-watershed runoff models of the Green River Basin in Kentucky are needed for the efficient operation of the basin's reservoirs. Correlative linear models that relate reach outflow to reach inflows and to precipitation over the side-inflow contributing watersheds offer a relatively simple, easy to use method of satisfying the requirements. Difference models were constructed for the 9 river reaches into which the Green River System had been divided previously. Submodels and the basin model made by linking the submodels together were found to perform better than the linear models constructed earlier. Premultiplication of the precipitation by the average monthly runoff coefficient prior to the model identification phase was found to improve the forecasting accuracy of the resulting difference model.

PB81-127276 PC **A04**/MF **A01**
Nevada Univ. System, Reno. Water Resources Center.
Basin Development and Water Allocation,
J. W. Fordham, G. F. Cochran, H. N. Friesen, W. W. Pidcoe, and S. A. Bamberg. Mar 80, 60p PUB-41065, W81-00514, OWRT-B-038-NEV(4)
Contracts DI-14-31-0001-3104, DI-14-31-0001-3612
Also pub. as OWRT-B-050-NEV(2).

Simulation techniques are described which would aid in the allocation of ground and surface water in semi-arid basins. The study area was Hualapai Valley in the northwestern Great Basin about 115 miles north of Reno, Nevada. The study was undertaken to simulate the combined surface and subsurface hydrology of a desert basin undergoing development and to determine the effects of the application of water right law on the hydrologic system.

PB81-127318 PC **A04**/MF **A01**
North Carolina Water Resources Research Inst., Raleigh.
Water Resources in North Carolina.
Annual rept.
1980, 72p UNC-WRRI-80-00, W81-00325, OWRT-A-999-NC(53)

The Water Resources Institute supported 35 research projects during the year covering topics such as algal blooms on the Chowan River, the effects of large-scale agricultural development, the quality of the planned B. Everett Jordan Reservoir, water conservation, and wetlands protection. The nuisance blooms on the Chowan River are one of the State's most serious and baffling environmental problems. New projects recently begun include: the hydrologic impacts of peat mining, treatment of pulp mill waste water, hydrologic and water quality models for in stream flow needs, and paper mill discharge effects on the Neuse River.

PB81-127383 PC **A05**/MF **A01**
Utah Water Research Lab., Logan.
Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
Rollin H. Hotchkiss, Eugene K. Israelsen, and J. Paul Riley. Oct 80, 93p UWRL/P-80/05, W81-00502, OWRT-A-046-UTAH(1)
Contract DI-14-34-0001-9047

The report examines the effects of present mining activities on the associated hydrologic system, and identifies specific mining procedures and management techniques which not only minimize negative hydrologic impacts of mining operations, but which also enhance the value of the hydrologic system in terms of existing and potential social uses. Thus, the results of the research contribute to the solution of present and future hydrologic problems (both quantity and quality) associated with coal mining in the western U.S. Emphasis is placed on sites which are representative of both existing and future coal mining areas. The study suggests not only ways of reducing negative hydrologic impacts of mining operations, but also operational and management mining techniques which will enhance the social use value of the hydrologic systems, and thus, in fact, create hydrologic opportunities.

PB81-128688 PC **A02**/MF **A01**
California Univ., Berkeley.
The Influence of River Water Quality on Storage Reservoir Management.
Technical completion rept.,
H. B. Fischer. Aug 80, 11p W81-00515, OWRT-W-525

The report describes a summary of work conducted from June 1977 to June 1980 on numerical modelling. This was used to predict water quality in small- and medium-sized reservoirs. Three aspects of the fluid mechanics of constituent transport to these sized reservoirs are examined in this basic research project: (1) deepening of the epilimnion caused by Kelvin-Helmholtz billowing; (2) mixing in the hypolimnion caused by sidewall turbulence; and (3) the effect of unsteady surface winds.

PB81-132235 PC **A06**/MF **A01**
EG and G Washington Analytical Services Center, Inc., Rockville. MD.
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
Final rept.,
Philip E. Shelley, and Eugene D. Driscoll. Oct 79, 125p D460-101, USGS/WRD/WRI-80/080
Portions of this document are not fully legible. Color illustrations reproduced in black and white.

A review of the Section 208 areawide water quality management program was made with respect to consideration given to urban runoff. It is concluded that, in general, the first round of '208' studies did not do an adequate job in examining urban runoff.

8I. Mining Engineering

BNL-51224(V.1) PC **A04**/MF **A01**
National Water Well Association, Worthington, OH.
Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction. Volume 1.
Dec 79, 63p
Contract AC02-76CH00016

The results are presented of an exhaustive literature search and evaluation concerning the properties and economics of commercially available nonmetallic well casing and screens. These materials were studied in terms of their use in low to intermediate temperature geothermal well construction. (ERA citation 06:000646)

BNL-51224(V.2) PC **A06**/MF **A01**
National Water Well Association, Worthington, OH.
Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction.
Dec 79, 117p
Contract AC02-76CH00016

Four appendices are included. The first covers applications of low-temperature geothermal energy including industrial processes, agricultural and related processes, district heating and cooling, and miscellaneous. The second discusses hydrogeologic factors affecting the design and construction of low-temperature geothermal wells: water quality, withdrawal rate, water depth, water temperature, basic well designs, and hydrogeologic provinces. In the third appendix, properties of metallic and nonmetallic materials are described, including: specific gravity, mechanical strength properties, resistance to physical and biological attack, thermal properties of nonmetallics, fluid flow characteristics, corrosion resistance, scaling resistance, weathering resistance of nonmetallics, and hydrolysis resistance of nonmetallics. Finally, special considerations in the design and construction of low-temperature geothermal wells using nonmetallics materials are covered. These include; drilling methods, joining methods, methods of casing and screen installation, well cementing, and well development. (ERA citation 06:000647)

DOE/BC/10007-8 PC **A04**/MF **A01**
Carnegie-Mellon Univ., Pittsburgh, PA.
Low Interfacial Tension and Miscibility Studies for Surfactant Tertiary Oil Recovery Processes. Annual Report, December 1, 1978-November 30, 1979.
C. A. Miller, and T. Fort, Jr. Oct 80, 63p
Contract AS19-79BC10007

Two model surfactant systems, one based on Texas 1 and the other on sodium dodecyl sulfate, were developed to give ultralow interfacial tensions and middle phase microemulsions when equilibrated with oil. Examination of their aqueous and microemulsion phase behavior, and comparison of the results with results of similar studies made on a system based on WITCO TRS 10-410, led to the conclusion that it is possible to generalize the phase behavior. The liquid crystalline spherulitic and lamellar textures observed in all these systems are the only homogeneous, nonphase separating fluids which can produce ultralow tensions on contact with oil. Mapping of the phase behavior of the two model surfactant systems showed that existence of the middle phase is relatively insensitive to surfactant concentration but quite dependent on cosurfactant concentration. Preliminary study of polymer-surfactant interactions confirmed the previously reported phase separation effect. A new temperature controlled polarized light screening device was built and has already been put to use for discrimination of isotropy, birefringence, scattering, and interfacial phenomena in systems of interest for enhanced oil recovery. (ERA citation 06:000172)

DOE/BC/10083-1 PC **A02**/MF **A01**
Houston Univ., TX.
Basic Studies in the Recovery of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1979-August 31, 1979.
R. W. Flumerfelt, and A. C. Payatakes. 1979, 5p
Contract AC19-79BC10083

Objectives of this program are to study the dynamic interfacial effects in recovery of residual oil in low tension displacements, and the dynamics of oil ganglion populations. Measurements of interfacial viscosity and coalescence experiments are reported briefly. (ERA citation 06:000173)

DOE/BC/10083-7 PC **A02**/MF **A01**
Houston Univ., TX.
Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, December 1, 1979-February 29, 1980.
R. W. Flumerfelt, and A. C. Payatakes. 31 Mar 80, 15p
Contract AC19-79BC10083

Objectives were to study dynamic interfacial effects on the recovery of residual oil in low tension displacements, and the dynamics of oil ganglion populations. Coalescence tests are underway. Experimental results on the behavior of oil ganglions are discussed. 9 figures. (ERA citation 06:000174)

DOE/BC/10083-8 PC **A03**/MF **A01**
Houston Univ., TX.
Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, March 1980-May 31, 1980.
R. W. Flumerfelt, and A. C. Payatakes. 9 Jul 80, 27p
Contract AC19-79BC10083

Objectives are to study the dynamic interfacial effects on residual oil recovery and the dynamics of oil ganglion populations. A series of coalescence tests on low concentration surfactant systems has been completed. A stability analysis for a stationary film under pure fluid conditions was completed. Visualization experiments were used to determine the velocity of an oil ganglion. A numerical method was developed to study the dynamics of interacting oil ganglia. 20 figures. (ERA citation 06:000175)

DOE/BC/10083-9 PC **A02**/MF **A01**
Houston Univ., TX.
Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1980-August 31, 1980.
R. W. Flumerfelt, and A. C. Payatakes. 15 Oct 80, 11p
Contract AC19-79BC10083

Dynamic interfacial effects on residual oil recovery are being studied. An analysis of the stability of a stationary thin film has been completed. Experimental studies of the coalescence of low-tension oil/water/surfactant systems were continued, using iso-octane, crude oil, and tert-amyl alcohol. With the alcohol, the fastest coalescence occurs with the lowest-tension system. 4 figures, 2 tables. (ERA citation 06:000176)

DOE/BETC-2880-1 PC **A03**/MF **A01**
Carmel Energy, Inc., Houston, TX.
Development and Field Testing of a Process for Recovering Heavy Crude Oil in the Carlyle Pool-Allen County, Kansas Using the Vapor Therm Generator. Final Report.
J. S. Sperry. Sep 80, 48p
Contract EY-76-C-02-2880

A Vapor Therm generator capable of producing steam and inert gases was built for conditions encountered in the Carlyle pool, and is capable of delivering heated gases at 900 psi and 700 exp 0 F. New wells were drilled in a five spot pattern with an inter-well distance of 208.7 ft. Logs and cores from these new wells were obtained and the subsurface reservoir was evaluated. Oil content of 1197 BSTO/Ac-Ft was encountered. This oil was 19.5 exp 0 API with a viscosity of 1026 cps at 70 exp 0 F. The net pay thickness beneath the pattern exceeded thirty-five feet. Bartlesville sand porosity was 23.6% and absolute permeability was 695 md. Initial reservoir pressure was 235 psi. The oil reservoir is underlain by an extensive aquifer whose thickness exceeds one hundred feet. On January 31, 1977, the first of four stimulation cycles in the Bartleville sand was begun. The final cycle was concluded on March 5, 1978. During these months of cyclic stimulation-production, the wells produced at a sustained average rate of 7.82 BSTO/day and a water/oil ratio of 1.3. Over three barrels of oil per barrel of steam injected was recovered on the 4th cycle. Maximum production rate is 151 BSTO/well/week. Total oil production during the four cycles was 9034 barrels of stock tank oil, indicating an enhanced recovery of 6.04% of original oil in place or 71.2 BSTO/Ac-Ft. (ERA citation 06:000178)

DOE/BETC-80/3 PC **A08**/MF **A01**
Department of Energy, Bartlesville, OK. Bartlesville Energy Technology Center.

Contracts for Field Projects and Supporting Research on Enhanced Oil Recovery and Improved Drilling Technology.
B. Linville. Oct 80, 173p

Objectives are listed and technical progress is summarized for contracts for field projects and supporting research on: chemical flooding, carbon dioxide injection, thermal/heavy oil, extraction technology, improved drilling technology, residual oil, and microbial enhanced oil recovery. (ERA citation 06:000177)

DOE/ET/10182-T1 PC **A04**/MF **A01**
Alabama Univ., University.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
G. W. Douglas, and M. D. McKinley. Mar 79, 60p
Contract AS05-78ET10182

Laboratory studies on a research combustor were used in an attempt to determine the length of oxidation and reduction zones. Unfortunately the buoyant effects of the heated gases caused the burn to proceed along the upper portion of the horizontal combustor. This made the interpretation of uncertain value. Methods of measuring the thermal conductivity and chemical reactivity of coke are discussed. A bibliography of the physical and chemical properties of coke is appended. (ERA citation 06:000027)

DOE/ET/10182-T2 PC **A02**/MF **A01**
Alabama Univ., University.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
Oct 78, 24p
Contract AS05-78ET10182

Support studies for in-situ gasification involved design and construction of a laboratory combustor, measurement of the physical and chemical properties of coke, experiments with the shrinking core combustion model, and calculations of in-situ combustion in thin seams and a review of the in-situ gasification experiments at Gorgas, Alabama. (ERA citation 06:000028)

DOE/ET/10182-T3 PC **A02**/MF **A01**
Alabama Univ., University.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
Jan 79, 19p
Contract AS05-78ET10182

Support studies of in-situ combustion involved borehole linking studies in a laboratory combustor using forward and reverse combustion. Borehole linking by forward combustion is not satisfactory with a swelling coal. Other experiments involved measurements of the thermal conductivity and reactivity of coke and mathematical models of coke combustion. (ERA citation 06:000029)

DOE/ET/10182-T4 PC **A02**/MF **A01**
Alabama Univ., University.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
G. W. Douglas, and M. D. McKinley. Mar 80, 20p
Contract AS05-78ET10182

Measurements of the thermal conductivity and thermal diffusivity are reported for several cokes over a range of temperatures. Numerical modeling of char combustion experiments carried out previously is considered. (ERA citation 06:000030)

DOE/ET/10182-T5 PC **A03**/MF **A01**
Alabama Univ., University.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
Jan 80, 38p
Contract AS05-78ET10182

Studies in support of in-situ gasification involved experiments in bench-scale combustors where three parameters were varied independently: initial fuel bed temperature, applied air flow and water vapor influx rate. Methods for measuring the thermal conductivity of solids at high temperatures were evaluated and measurements of the thermal conductivity and thermal diffusivity were made over a temperature range for several samples of coke. (ERA citation 06:000031)

DOE/ET/10182-T6 PC **A03**/MF **A01**
Alabama Univ., University.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
G. W. Douglas, and M. D. McKinley. Oct 79, 30p
Contract AS05-78ET10182

Studies in support of in-situ gasification involved bench-scale combustor experiments using forward combustion and coke as a fuel. Measurements of the thermal conductivity, thermal diffusivity and reactivity were made on several cokes over a range of temperatures. (ERA citation 06:000032)

DOE/ET/10182-T7 PC **A04**/MF **A01**
Alabama Univ., University.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
Jun 79, 51p
Contract AS05-78ET10182

Because of high internal temperatures, the external temperature has no effect upon the reaction rate of coke particles with air for temperatures above 750 exp 0 K. Reactions could not be initiated below that temperature. Chemical reaction rate was not found to be a rate-controlling step: both extra-particle and intra-particle diffusion are important and limit the rate of oxidation. The observed values of k/sub c/, the extra-particle mass transfer coefficient were found to be in good agreement with the correlation of Ranz and Marshall. The effective diffusivity, D/sub e/, of the ash layer was not affected by changes in temperature, oxygen concentration, gas flow rate, and particle size. The observed value of D/sub e/ was 0.69 cm exp 2 / sec with a standard deviation of 0.04. Experiments with bench-scale combustors, measurements of the thermal conductivity of coke and of the reactivity of coke at 500 exp 0 C made from Alabama coals are also discussed. (ERA citation 06:000033)

DOE/ET/11268-3 PC **A13**/MF **A01**
Skelly and Loy, Harrisburg, PA.
General Application of the Critical Path Method to Resource Characterization and Planning for Underground Coal Mining. Final Technical Report.
May 80, 287p
Contract AC01-79ET11268

The decision to open an underground coal mine marks the beginning of a complex and costly operation. This report presents the results of the application of the critical path method (CPM) to the total mine planning process. The extensive scope of the process coupled with the complexity of the calculations involved made the use of some form of automation a necessity. Therefore, initial task efforts centered on a search for a satisfactory computer system to enable the handling of the project in a timely fashion. A commercially available CPM software package called SPRED (Solution of the PREcedence Diagram) was chosen. A key prerequisite to the application of CPM was the identification of all of the activities involved in the mine planning process and the determination of all of the interrelationships that exist between them. Results of this work were reproduced graphically in the form of a network diagram. This format depicted all of the activities as labeled boxes in their proper logical sequence of events. Interdependencies were shown by lines connecting the related activities. On its own merit, the network diagram was a valuable tool in conveying a project overview and showing the complexity of the mine planning process. In order to apply CPM techniques to the information generated, each activity was weighted within the context of the entire development project. To accomplish this, an expected duration for completion of each activity was assigned. All of the information necessary for the application of critical path scheduling techniques was produced at this point and the data prepared in the format suitable for input to the SPRED system. SPRED performed all of the critical path calculations and produced appropriate scheduling information. Analysis of the results shows that critical path techniques have definite applicability in mine planning. (ERA citation 05:025241)

DOE/ET/28460-5 PC **A03**/MF **A01**
Gruy Federal, Inc., Houston, TX.
Investigation and Evaluation of Geopressured-Geothermal Wells.
J. H. Hartsock, and J. A. Rodgers. Sep 80, 46p
Contract AC08-77ET28460

Over the life of the project, 1143 wildcat wells were screened for possible use. Although many did not meet the program's requirement for sand development, a surprisingly large number were abandoned because of downhole mechanical problems. Only 94 of these wells were completed as commercial hydrocarbon producers. Five wells of opportunity were funded for testing. Of these, two were evaluated for their hydraulic energy, thermal energy, and recoverable methane, and three were abandoned because of mechanical problems. (ERA citation 06:000648)

DOE/EV/10256-1 PC **A02**/MF **A01**
Alaska Agricultural Experiment Station, Palmer.
Revegetation of Alaskan Coal Mine Spoils. Progress Report.
W. W. Mitchell, G. A. Mitchell, and J. D. McKendrick. 23 May 80, 18p
Contract AT06-79EV10256

Activities initiated after the start of the revegetation project on Alaskan coal mine spoils on September 1, 1979 have consisted mainly of some fall plantings (dormant seedings) and soil and coal spoil samplings and analyses. Because of the late summer start for the project, only a limited amount of field work could be initiated in plant material studies. This consisted of a fall planting at the Usibelli mine site at Healy in interior Alaska. The planting was intended to test the efficacy of seeding in the frost period following the growing season, requiring the seed to remain dormant over winter and to germinate when conditions become favorable in late spring. It also was intended as a comparison of a number of different grasses. Thirty entries were seeded in three replications. Fifteen species of grasses and a clover were included in the trial. The site provided for the trial was on overburden material along a streambed. Among the entries were eight cultivars of introduced grasses, five cultivars of native Alaskan germplasm, one introduced clover cultivar, and sixteen experimental grasses mainly of Alaskan origin. (ERA citation 06:000144)

DOE/LETC/TPR-80-1761
PC **A06**/MF **A01**
Department of Energy, Laramie, WY. Laramie Energy Technology Center.
Tar Sand Extraction by Steam Stimulation and Steam Drive: Measurement of Physical Properties.
W. R. Linberg. 10 Sep 80, 115p
Contract AS20-79LC01761

The measurement of the following thermophysical properties of Utah tar sands is in progress: thermal conductivity, specific heat relative permeability, and viscosity (of the recovered bitumen). During the report period (October 1, 1978 to November 1, 1979), experimental procedures have been developed and a basic data set has been measured. Additionally, standard core analysis has been performed for four drill sites in the Asphalt Ridge, Utah area. (ERA citation 06:000251)

DOE/MC/10641-T1 PC **A05**/MF **A01**
Intercomp Resource Development and Engineering, Inc., Houston, TX.
Evaluation of Data Gathered from Unminable Coal Seams. Final Report.
Aug 80, 76p
Contract AC21-79MC10641

The objective of this effort was to provide for the reduction in uncertainties in critical parameters related to the methane exploration and recovery from unminable coals in the United States. The current contract with DOE calls for INTERCOMP to assist in the characterization of unmineable coalbeds with particular emphasis on methane producibility. (ERA citation 06:000138)

DOE/RA/20014-T1 PC **A09**/MF **A01**
Input Output Computer Services, Inc., Washington, DC.
Marketing of Coal Mining Equipment. Evaluation of Present Techniques: Suggestions to Aid Commercialization. Final Report.
19 Sep 80, 185p

Contract AC01-79RA20014

This report is an examination of the equipment preferences and decision-making methodology of the coal industry. The prime purpose is to indicate directions in which equipment research might proceed and also to indicate methods by which investment in new, more productive mining equipment could be encouraged. In addition to this, an investigation of the research and development decisions of major mining equipment manufacturers was conducted. The findings can best be condensed into three categories: needs for equipment in underground mining, needs for equipment in surface mining, and the purchase decision by coal mine operators. (ERA citation 06:000145)

GJBX-114(80) PC **A04**/MF **A01**
Bendix Field Engineering Corp., Grand Junction, CO.
Evaluation of Selected Geochemical Anomalies in Colorado and the Southeastern US. Final Report.
R. H. Carpenter. Aug 80, 75p
Contract AC13-76GJ01664

This study demonstrates the utility of HSSR geochemical data from stream sediment in exploration for uranium. In the southeastern US, four uraniferous occurrences and associated radiometric anomalies were identified in areas where uranium mineralization has not been previously reported. At two localities, assays of about .01% have been obtained from saprolite. There is some evidence which suggests that uranium may have been leached at these localities and that higher grades of U are likely at depth. (ERA citation 05:037670)

GJBX-168(80) PC **E11**/MF**$4.50**
INCO, Inc., McLean, VA.
Aerial Radiometric and Magnetic Survey, San Angelo National Topographic Map: Texas, West Texas Project. Final Report.
May 80, 294p
Contract AC13-76GJ01664

The results of analyses of the airborne gamma radiation and total magnetic field survey flown for the region identified as the San Angelo National Topographic Map NH14-1 are presented. The airborne data gathered are reduced by ground computer facilities to yield profile plots of the basic uranium, thorium, and potassium equivalent gamma radiation intensities, ratios of these intensities, aircraft altitude above the earth's surface, total gamma ray and earth's magnetic field intensity, correlated as a function of geologic units. The distribution of data within each geologic unit, for all surveyed map lines and tie lines, has been calculated and is included. Two sets of profiled data for each line are included, with one set displaying the above-cited data. The second set includes only flight line magnetic field, temperature, pressure, altitude data plus magnetic field data as measured at a base station. A general description of the area, including descriptions of the various geologic units and the corresponding airborne data, is included. (ERA citation 05:037672)

GJBX-177(80) PC **A04**/MF **A01**
Bendix Field Engineering Corp., Grand Junction, CO.
Principles and Characteristics of Surface Radon and Helium Techniques Used in Uranium Exploration.
J. C. Pacer, and R. F. Czarnecki. Sep 80, 72p
Contract AC13-76GJ01664

Studies were carried out to determine the nature of some of the surface radon and helium techniques used for uranium exploration. By performing radon and helium measurements at three sites with differing geology and accessibility, we were able to examine the constraints on the features determined. The sites are the Red Desert in south central Wyoming, Copper Mountain in central Wyoming, and Spokane Mountain in eastern Washington. The radon techniques employed were: zinc sulfide detectors, an ionization chamber, alpha track detectors, thermoluminescence detectors, charcoal canisters, and the partial extraction of lead-210 from soil samples. Helium was measured in soil-gas samples, soil gas from collectors, and soil samples. The ratio helium-4/argon-36 was measured in soil gas. (ERA citation 05:037673)

GJBX-178(80) PC **E11**/MF**$4.50**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Memphis Quadrangle, Arkansas, Missouri, and Tennessee. Final Report.
Aug 80, 304p
Contract AC13-76GJ01664

The Memphis quadrangle covers a region at the western edge of the Gulf Coastal Province. Thick Cenozoic sediments unconformably overlie Paleozoics in the east. The underlying Paleozoic section is exposed in the northwest. A search of available literature revealed no known uranium deposits. Seventy-two uranium anomalies were detected and are discussed briefly. None were considered significant, and most appear to relate to some cultural feature. Magnetic data appear, for the most part, to be in agreement with existing structural interpretations of the region. (ERA citation 05:037674)

GJBX-185(80) PC **E09**/MF**$3.00**
Oak Ridge Gaseous Diffusion Plant, TN.
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
31 Jul 80, 380p K/UR-140
Contract W-7405-ENG-26

Results of a reconnaissance geochemical survey of the Grand Island Quadrangle, Nebraska/Kansas are reported. Statistical data and areal distributions for uranium and uranium-related variables are presented for 564 groundwater and 532 stream sediment samples. Also included is a brief discussion on location and geologic setting. Groundwater data indicate that uranium concentrations above the 85th percentile occur primarily in shallow wells (0 to 20 m) along or near the Platte and Republican Rivers, which flow west to east along the northern and southern portions of the quadrangle, respectively. Waters containing high concentration of uranium in the northern portion of the quadrangle occur in recent alluvium and nearby glacial deposits. In the southern portion of the quadrangle, waters containing high uranium concentrations occur in Recent alluvium and the Niobrara Chalk in the southeast. Stream sediment data indicate that uranium concentrations above the 85th percentile occur in sediments along the Platte River in the northern portion of the quadrangle and paralleling the Republican River in the southeastern portion. Sediments with high uranium values along the Platte River are derived from glacial and alluvial deposits. High uranium values paralleling the Republican River in the southeast are derived from the Niobrara Chalk, the Carlile Shale, and glacial and alluvial deposits. High U-NT and thorium values, and high values for cerium, niobium, scandium, titanium, vanadium, yttrium, and zirconium suggest the presence of clays and/or residual minerals in the southeast. Sediment derivation and the leaching of possible ash-rich loess and alluvial deposits and/or uranium-rich alkaline evaporite deposits could account for high uranium concentrations in sediment and groundwaters within the quadrangle. (ERA citation 05:037675)

GJBX-198(80) PC **E03**/MF**$3.00**
Du Pont de Nemours (E.I.) and Co., Aiken, SC. Savannah River Lab.
Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
W. M. Fay. Aug 80, 18p DPST-80-146-12
Contract AC13-76GJ01664

Results of ground water and stream/surface sediment reconnaissance in the National Topographic Map Series Delta 1 exp 0 x 2 exp 0 quadrangle are presented. Surface sediment samples were collected at 1311 sites, at a target sampling density of 1 site/13 exp 2 kilometers. Ground water samples were collected at 140 sites. Neutron activation analysis results are given for U and 16 other elements in sediments, and for U and 9 other elements in ground water. Mass spectrometry results are given for He in ground water. Data from ground water sites include: water chemistry measurements; (pH, conductivity, and alkalinity); physical measurements where applicable (water temperature, well description, and scintillometer reading); and elemental analyses (U, Al, Br, Cl, Dy, F, He, Mg, Mn, Na, and V). Data from sediment sites include: stream water chemistry measurements from sites where water was available; and elemental analyses for sediment samples (U, Th, Hf, Al, Ce, Dy, Eu, Fe, La, Lu, Mn, Sc, Sm, Na, Ti, V, and Yb). Sample site descriptors are also tabulated. Areal distribution maps, histograms, and cumulative frequency plots for most elements; U/Th, U/Hf, U/(Th + Hf), and U/La rations; and scintillometer readings at sediment sample sites are included on the microfiche. U concentrations in sediments of the Delta quadrangle are relatively low. The highest U values, up to 37.9 ppM, are in samples which also have relatively high Th contents. This suggests that most of the U in these samples is held within monazite crystals. Most of these samples with the highest U/Th ratios are from flatlying valley areas; therefore, the U may have precipitated from ground or surface waters. Several ground-water samples have anomalously high (up to 55.6 ppB) U concentrations. Two of the anomalous samples were collected in the northeast portion of the quadrangle which is underlain by Miocene granite rocks. (ERA citation 05:037676)

GJBX-200(80) PC **E09**/MF**$4.10**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Fort Smith Quadrangle, Oklahoma, and Arkansas. Final Report.
Sep 80, 368p
Contract AC13-76GJ01664

The Fort Smith quadrangle in western Arkansas and eastern Oklahoma overlies thick Paleozoic sediments of the Arkoma Basin. These Paleozoics dominate surface exposure except where covered by Quaternary Alluvial materials. Examination of available literature shows no known uranium deposits (or occurrences) within the quadrangle. Seventy-five groups of uranium samples were defined as anomalies and are discussed briefly. None were considered significant, and most appeared to be of cultural origin. Magnetic data show character that suggest structural and/or lithologic complexity, but imply relatively deep-seated sources. (ERA citation 05:037677)

GJBX-202(80) PC **E08**/MF**$4.10**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Nashville Quadrangle, Tennessee, and Kentucky. Final Report.
Sep 80, 352p
Contract AC13-76GJ01664

The Nashville quadrangle covers a portion of the interior lowland plateau region of the Midwestern Physiographic Province. The quadrangle contains a shallow to moderately thick Paleozoic section that overlies a Precambrian basement complex. Paleozoic carbonates dominate surficial exposures. A search of available literature revealed no known uranium deposits. Fifty-five uranium anomalies were detected and are discussed briefly. Most anomalies appear to relate to cultural features. Some have relatively high uranium concentration levels that may be significant despite their correlation with culture. Magnetic data appear to illustrate complexities in the Precambrian basement. (ERA citation 05:037678)

GJBX-203(80) PC **E09**/MF**$4.10**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Tupelo Quadrangle, Mississippi, Alabama, and Tennessee. Final Report.
Sep 80, 382p
Contract AC13-76GJ01664

The Tupelo quadrangle covers a region immediately east of the Mississippi River flood plain in the northernmost Gulf Coastal Physiographic Province. Sediments of Teritary and Paleozoic basins shoal eastward. Tertiary exposures dominate the western half of the quadrangle. Cretaceous strata are exposed over most of the eastern half. A search of available literature revealed no known uranium deposits. A total of eighty-six uranium anomalies were detected and are discussed briefly. Few were considered significant, and most appear to relate to some cultural feature. Magnetic data appears, for the most part, to be in agreement

with existing structural interpretations of the region. (ERA citation 05:037679)

GJBX-204(80) PC **E09**/MF**$3.00**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Russellville Quadrangle, Arkansas.
Sep 80, 354p
Contract AC13-76GJ01664

The Russellville quadrangle in north central Arkansas overlies thick Paleozoic sediments of the Arkoma Basin. These Paleozoics dominate surface exposure except where covered by Quaternary alluvial materials. Examination of available literature shows no known uranium deposits (or occurrences) within the quadrangle. Eighty-eight groups of uranium samples were defined as anomalies and are discussed briefly. None were considered significant, and most appeared to be of cultural origin. Magnetic data show character that suggest structural and/or lithologic complexity, but imply relatively deep-seated sources. (ERA citation 05:037680)

GJBX-212(80) PC **A04**/MF **A01**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey, Montrose Detail Projects, Colorado. Volume I. Final Report.
Apr 80, 69p
Contract AC13-76GJ01664

In the months of August, September, and October 1978, EG and G geoMetrics collected 4231 miles of high sensitivity airborne radiometric and magnetic data in southwestern Colorado. Data were collected on traverse lines 1/4 mile apart and on tie lines of approximately 6 mile spacing in five separate detail areas primarily within the Montrose 1 exp 0 x 2 exp 0 sheet. All data were fully reduced and interpreted by geoMetrics and are presented as six volumes (one Volume I and five Volume II's) in this final report. A complex group of mid-Tertiary acidic to intermediate intrusive and extrusive rocks dominate the surface of most of the detail areas. In the westernmost area the igneous sequence overlies Colorado Plateau formations primarily of Cretaceous age. In the east, Precambrian and Paleozoic rocks are the dominant underlying rock types. Economic mineral deposits abound in this area, and several uranium mines (and prospects) are present. In addition to the standard data presentations and processing procedures, the data were examined for anomalous uranium values and mappable geochemical subunits using the radiometric and magnetic data. Principal component analysis was performed on the radiometric data using standard deviation subunits defined by Bendix Field Engineering Corporation. (ERA citation 05:037681)

GJBX-212(80)(V.2)(AREA1)
PC **E14**/MF**$4.70**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 1, Colorado. Final Report.
May 80, 634p
Contract AC13-76GJ01664

The Montrose Detail Area No. 1 covers a 150 square mile area near the central portion of the San Juan Volcanic Region. The areas' geology is completely dominated by Tertiary volcanic events and subsequent surficial modifications. A group of 25 groups of samples in the uranium window constitute anomalies as defined in Volume I. These anomalies lie over the highest uranium, thorium, and potassium count rate areas primarily in the La Garita Mountains and the South Fork Saquache Creek drainage. Highest count rates appear to be associated with certain tuffaceous units as mapped. High gradients completely dominate the magnetic signature of the area. Little correlation with the radiometric data was expected or observed. The region appeared geochemically homogenous on the basis of radiometric data according to the criteria set forth in Volume I. (ERA citation 05:037683)

GJBX-212(80)(V.2)(AREA2)
PC **E06**/MF**$3.00**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 2, Colorado. Final Report.
Apr 80, 219p
Contract AC13-76GJ01664

The Montrose Detail Area No. 2 covers 315 square miles of area along the western edge of the Sawatch Mountains. Precambrian crystalline rocks and Paleozoic sediments share dominance in the area. The Paleozoic section deepens toward the north. Some Tertiary intrusive and extrusive rocks that may relate to the nearby igneous activity in the San Juan Mountains are present in the area. Cretaceous and Jurassic sediments also have limited exposure. The Whitepine Mining District (Zn-Pb) lies in the southern end of the detail area. Mineralization occurs in shear zones along the contact between Early Paleozoics and Precambrian rocks. Two uranium deposits occur nearby in a similar geologic setting. One other known uranium deposit occurs in the northern end of the detail area. The geologic characteristics of this deposit are not known. A total of 37 groups of samples in the uranium window constitute anomalies as defined in Volume I. These anomalies cluster over the high uranium count rate areas in the Fossil Ridge-Taylor River and Canyon Creek areas. Highest count rates appear to be associated with faulted Early Paleozoics and adjacent Precambrian rocks. Some high count rate localities appear to overlie isolated Tertiary intrusive bodies. Magnetic data do not outline structural features as mapped by Tweto and others (1976). Some areas mapped as Precambrian and others mapped as Tertiary intrusives have associated high magnetic gradients. Other areas mapped similarly do not have high magnetic gradients. Little correlation with the radiometric data was expected or observed. Three geochemical subdivisions were made on the basis of radiometric data according to the criteria set forth in Volume I, only two of which appeared to have any apparent geologic meaning. Multivariate analysis lends support to this conclusion. (ERA citation 06:000260)

GJBX-212(80)(V.2)(AREA3)
PC **E09**/MF**$3.00**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 3, Colorado. Final Report.
Apr 80, 364p
Contract AC13-76GJ01664

The Montrose Detail Area No. 3 comprises approximately 140 square miles at the extreme southern end of the Sawatch Mountains. The region's geology is apparently a complex interface between Precambrian and associated Paleozoic rocks of the Sawatch Uplift, and faulted Tertiary intrusive and extrusive rocks of the San Juan Mountains Volcanic Province. Oligocene igneous rocks dominate the surface of the area. Mining activity (Pb-Zn-Ag) is extensive in the Bonanza Area, which occupies most of the western half of the detail area. Some occurrences of uranium are known in the mines, and in a single prospect in Paleozoics to the southeast. A total of 34 groups of samples in the uranium window constitute anomalies as defined in Volume I. The majority of the anomalies lie over mine shafts or related features. Some of the other anomalies appear in close proximity to the Sheep Mountain area along the northwest border in association with faults and Tertiary igneous units. Magnetic data outline the major Tertiary intrusive bodies, as well as some heavily faulted Tertiary volcanics and portions of the Precambrian metamorphic sequence. Three geochemical units were defined on the basis of radiometric criteria set forth in Volume I. The spatial distribution of these units showed varying correlations with the geologic, magnetic, and topographic variations within the detail area. (ERA citation 06:000261)

GJBX-212(80)(V.2)(AREA4)
PC **E11**/MF**$4.25**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 4, Colorado. Final Report.
May 80, 474p
Contract AC13-76GJ01664

The Montrose Detail Area No. 4 comprises approximately 215 square miles in the Central Sawatch Mountains in a region dominated by outcrops of Precambrian basement, Tertiary and Cretaceous intrusives, and glacial cover. A single uranium prospect lies in Precambrian rocks west of the Taylor Park. Other mining activity in the area appears to be limited to extensive prospecting for molybdenum in the Tertiary rocks in the Winfield area. A total of 26 groups of uranium samples constitute anomalies as defined in Volume I. the largest group of anomalies lies over the Windfield area. Other significant anomalies overlie certain Precambrian rocks, as in the Three Apostles area and over the single uranium prospect. Magnetic data outline some Precambrian and Tertiary rock units, but are largely uninterpretable in the scope of this report. There is little apparent correlation with the geology as mapped, or with the radiometric data. Three geochemical units were defined on the basis of the radiometric criteria set forth in Volume I. (ERA citation 06:000259)

GJBX-212(80)(V.2)(AREA5)
PC **E08**/MF**$3.00**
EG and G GeoMetrics, Sunnyvale, CA.
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 5, Colorado. Final Report.
Apr 80, 318p
Contract AC13-76GJ01664

The Montrose Detail Area No. 5 consists of a 180 square mile area covering portions of the West Elk Mountains, the Ruby Range, and associated mountainous regions of the Southern Rocky Mountains. The area's geology is dominated by Tertiary intrusive and extrusive rocks related to the West Elk Mountains Volcanic Province. Some exposures of underlying Tertiary and Cretaceous material are present. The Irwin Mining District (Anthracite) lies within the detail area, as well as several small prospects for zinc, lead, and silver. No uranium occurrences are known to be associated with these mineralized areas. A total of 26 groups of samples in the uranium window constitute anomalies as defined in Volume I. These anomalies lie over the highest uranium count rate areas in the Ruby Range, the Anthracite Range, and the East Beckwith Mountain area. The highest count rates appear associated with dikes of granodiorite and/or white quartz porphyry. Magnetic data outline the major intrusive and extrusive bodies in the south, but only partially define the intrusive complex to the north. Little correlation with the radiometric data was expected or observed. Despite a wide range in the count rates of the three radioisotopes, the area appeared to be geochemically homogeneous according to the criteria set forth in Volume I. Other methods of separating geochemically distinctive areas may be more successful. Multivariate analysis showed a high degree of correleation between the three isotopes. (ERA citation 05:037684)

PAT-APPL-6-107 792 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Method of Lining a Vertical Mine Shaft with Concrete.
Patent Application,
J. D. Eklund, J. M. Halter, D. E. Rasmussen, R. G. Sullivan, and R. B. Moffat. Filed 17 Dec 79, 23p
Contract ET-77-C-01-9125
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The apparatus includes a cylindrical retainer form spaced inwardly of the wall of the shaft by the desired thickness of the liner to be poured and having overlapping edges which seal against concrete flow but permit the form to be contracted to a smaller circumference after the liner has hardened and is self-supporting. A curb ring extends downwardly and outwardly toward the shaft wall from the bottom of the retainer form to define the bottom surface of each poured liner section. An inflatable toroid forms a seal between the curb ring and the shaft wall. A form support gripper ring having gripper shoes laterally extendable under hydraulic power to engage the shaft wall supports the retainer form, curb ring and liner until the newly poured liner section becomes self-supporting. Adjusting hydraulic cylinders permit the curb ring and retainer form to be properly aligned relative to the form support gripper ring. After a liner section is selfsupporting, an advancing system advances the retainer form, curb ring and form support gripper ring toward a shaft boring machine above which

the linear is being formed. The advancing system also provides correct horizontal alignment of the form support gripper ring. (ERA citation 06:001878)

PB81-125528 PC **A02**/MF **A01**
Mathematical Applications Group, Inc., Elmsford, NY.
An Interactive Computer System for Evaluating Coal Mine Illumination.
Open file rept. (Final) Oct 77-Dec 79,
Robert Goldstein. Mar 80, 21p BUMINES-OFR-110-80
Contract S0271041

A computer system for calculating the illumination on coal mine surfaces due to machine-mounted lights is described. Utilizing numerical models of mining machinery and measured data on luminaire output characteristics, the program computes the foot-candle levels incident on the mine entry surfaces for any desired machine-luminaire-entry configuration. Shadowing effects of the machine are taken into account. Results are provided at 2-foot intervals on the face, left and right walls, floor, and roof. The system operates interactively from a Tektronix 4014 graphics terminal which handles all input-out functions. The software is installed on a Cyber 74 computer that communicates with the terminal by a telephone line.

PB81-128969 PC **A10**/MF **A01**
Flow Industries, Inc., Kent, WA.
Field Test of Hydraulic Borehole Mining Systems in Shallow Uranium Sands.
Final rept. Jun 77-Sep 78,
William R. Archibald. Sep 78, 217p FLOW TECHNOLOGY-131, BUMINES-OFR-136-80
Contract H0272010

This report presents the results of a program demonstrating the technical and economic feasibility of hydraulic borehole mining of uraniferous sandstone. A high-pressure cutting jet and a slurry jet pump make up the borehole mining tool, which is lowered down a borehole into the uranium-bearing sandstone. Water from the cutting jet cuts into the sandstone formation generating a water-sand slurry which is pumped to the surface, thereby forming a cavity in the formation. When the cavity size reaches a point beyond the effective radius of the cutting jet, the mining tool is moved to an adjacent borehole and the process is started again.

PB81-130833 PC **A07**/MF **A01**
Bolt Beranek and Newman, Inc., Cambridge, MA.
Noise Reduction of Chain Conveyors. Volume I.
Open file rept. (Final) Jun 78-Dec 79,
A. Galaitsis, R. Madden, and D. Andersen. Dec 79, 144p BUMINES-OFR-133-80
Contract H0155113

This report describes the noise source diagnosis of a Jeffrey 120M conveyor and the evaluation of several treatments all conducted in a test facility aboveground. The conveyor noise at the operator's position was gradually reduced from 101.5 to 93 dbA using damping, vibration isolation, sound barriers, and smoother discontinuities.

PB81-130858 PC **A06**/MF **A01**
Pennsylvania State Univ., University Park.
Interactive Mine-Power-System Analysis--APL Fault Program.
Open file rept. (Final) 30 May 78-14 Feb 79,
Frederick C. Trutt, Lloyd A. Morley, and Richard A. Rivell. 1 Mar 79, 109p BUMINES-OFR-131-80
Grant G0188035
See also report dated 30 May 78, PB-297 295.

A guide to the development and utilization of an interactive mine-power-system fault program is presented. Theoretical foundations and implementation considerations are discussed with respect to the mine-power system. Alternative Kron reduction techniques are presented along with a triangular-storage method for storage conservation. Program capabilities include the analysis of balanced and unbalanced fault situations using symmetrical component theory. To account for phase shifting in delta-wye transformers and zero-sequence network constructions, transformer and load configurations are specified. The positive- and zero-sequence connections needed for network conformity are automatically constructed with the required impedances.

PB81-130866 PC **A09**/MF **A01**
Woodward Associates, Inc., San Diego, CA.
Steering System Survey for Surface Mining Equipment.
Final rept. 21 Sep 77-20 Apr 79,
Jack L. Woodward, Lawrence L. Owens, Robert J. McCracken, and Peter I. Mate. 20 Apr 79, 186p WA-79-50F, BUMINES-OFR-132-80
Contract J0275014

The expansion of mine production has required the development of larger and more productive loaders, scrapers, haulage trucks, and similar equipment. These machines have required the development and production of more powerful and complex steering systems. Careful analysis of these systems was warranted to determine if steering-related safety problems have been introduced. The objectives of this program were to define the specific types of steering systems now in use in wheeled surface mining equipment, gather information on the mining accidents resulting from malfunctions of equipment steering systems, estimate the relative numbers and sizes of mobile mining equipment in use, and to evaluate the need for new research projects or additional health and safety regulations. A comprehensive literature survey was conducted concurrent with extensive contacts with mining operations, mining equipment manufacturers, steering system component manufacturers, and government agencies. It was concluded that the steering systems in use on surface mining equipment are reliable and do not present a safety problem.

PB81-851362 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Sep 80,
John H. Frey. Oct 80, 113p NERACEDBNT1848
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning seismic surveying instruments and techniques used in prospecting for coal deposits for mining or gasification. Results of seismic surveys for coal deposits at specific locations throughout the world are also included. (Contains 112 citations.)

PNL-3439 PC **A08**/MF **A01**
Battelle Pacific Northwest Labs., Richland, WA.
Some Implications of in Situ Uranium Mining Technology Development.
C. E. Cowan, M. A. Parkhurst, R. J. Cole, D. Keller, and P. J. Mellinger. Sep 80, 157p
Contract AC06-76RL01830

A technology assessment was initiated in March 1979 of the in-situ uranium mining technology. This report explores the impediments to development and deployment of this technology and evaluates the environmental impacts of a generic in-situ facility. The report is divided into the following sections: introduction, technology description, physical environment, institutional and socioeconomic environment, impact assessment, impediments, and conclusions. (ERA citation 05:037686)

SAND-80-0834C PC **A11**/MF **A01**
Sandia National Labs., Albuquerque, NM.
High Temperature Electronics and Instrumentation Seminar Proceedings.
A. F. Veneruso, C. Arnold, and R. S. Simpson. May 80, 227p CONF-791248-
Contract AC04-76DP00789
High temperature electronics and instrumentation seminar, Houston, TX, USA, 3 Dec 1979.

This seminar was tailored to address the needs of the borehole logging industry and to stimulate the development and application of this technology, for logging geothermal, hot oil and gas, and steam injection wells. The technical sessions covered the following topics: hybrid circuits, electronic devices, transducers, cables and connectors, materials, mechanical tools and thermal protection. Thirty-eight papers are included. Separate entries were prepared for each one. (ERA citation 06:000601)

8J. Physical Oceanography

AD-A091 942/3 PC **A09**/MF **A01**
Synectics, Corp., Rome, NY.
Bathymetric Data Reduction System.
Final technical rept. Aug 76-Mar 80,
Donald T. Alvarez, Joan R. Terenzette, and David A. Kolassa. Aug 80, 192p CJ-0756-A, RADC-TR-80-273
Contract F30602-76-C-0412

This report describes the development of the bathymetric data reduction system. It addresses mathematical areas (projection transformations and their inverses, fathogram processing and geographic sectioning) data accuracy considerations. (Registration and data manipulation), software accomplishments (digitizing, batch processing and data base) and software/hardware configuration. This report contains appendices detailing terms used, loadlines and file and record formats. (Author)

AD-A091 965/4 PC **A02**/MF **A01**
Washington Univ., Seattle Dept. of Oceanography.
Freshwater and Atlantic Water in the Kara Sea.
Technical rept. 1 Oct 76-30 Sep 80,
Dennis Hanzlick, and Knut Aagaard. 9 Nov 79, 9p Rept nos. TR-18, CONTRIB-1143
Contract N00014-75-C-0893
Pub. in Jnl. of Geophysical Research, v85 nC9 p4937-4942, 20 Sep 80.

No abstract available.

AD-A091 968/8 PC **A02**/MF **A01**
Lamont-Doherty Geological Observatory, Palisades, NY.
Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
Journal article,
Venkatarathnam Kolla, John A. Kostecki, Lawrence Henderson, and Lillian Hess. 10 May 79, 23p Rept no. LDGO-2968
Contract N00014-75-C-0210, Grant NSF-OCE-77-22893
Pub. in Sedimentology, v27 p357-378 1980.

No abstract available.

AD-A091 974/6 PC **A02**/MF **A01**
Louisiana State Univ., Baton Rouge. Coastal Studies Inst.
High-Precision Instrumentation System for Sea-Bed Pressure Measurements in Muddy Sediments.
Technical rept.,
Rodney G. Fredericks, and John T. Wells. 1980, 8p Rept no. TR-309
Contract N00014-75-C-0192
Pub. in Oceans 1980, IEEE, Sep 80.

No abstract available.

AD-A092 000/9 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Anomalous Water in the Deep Ocean Suggests Lateral Advection-Stirring.
Technical rept.,
Laurence Armi. 21 Jun 79, 6p Rept nos. WHOI-80-44, WHOI-CONTRIB-4355
Contract N00014-76-C-0197, Grant NSF-OCE76-81190
Pub. in Science, v208 p1061-1062, 30 May 80.

No abstract available.

AD-A092 025/6 PC **A04**/MF **A01**
Environmental Research Inst. of Michigan, Ann Arbor. Applications Div.
Coastal Remote Sensing Investigations. Volume 1. Marine Environment.
Final technical rept. 1 Mar 78-30 Apr 80,

David R. Lyzenga. Apr 80, 64p Rept no. ERIM-134400-11-F-VOL-1
Contract N00014-78-C-0458

Algorithms for the extraction of water attenuation and bottom reflectance parameters in shallow water from remote sensing data are described and evaluated. Assuming water parameters are uniform, relative water attenuation coefficients can be extracted from passive data and absolute attenuation coefficients can be obtained from active/passive scanner data. Bottom reflectance variations can be mapped using passive multispectral scanner data. Preliminary development of a Monte Carlo radiative transfer model has begun. A new approximate radiative transfer model has also been developed and the results are compared with exact calculations and with the results of the quasi-single-scattering (QSS) and double-delta (Turner) models. (Author)

AD-A092 081/9 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA. Dept. of Geology and Geophysics.
Oblique Anhysteretic Remanent Magnetization.
Technical rept.,
Charles R. Denham. 24 Feb 78, 11p Rept nos. WHOI-80-50, WHOI-CONTRIB-4068
Contract N00014-74-C-0262. Grant NSF-OCE77-82255
Pub. in Jnl. of Geophysical Research, v84 nB11 p6286-6290, 10 Oct 79.

No abstract available.

AD-A092 089/2 PC **A03**/MF **A01**
Cold Regions Research and Engineering Lab., Hanover, NH.
Investigations of Sea Ice Anisotropy, Electromagnetic Properties, Strength, and Under-Ice Current Orientation,
Austin Kovacs, and Rexford M. Morey. Sep 80, 26p Rept no. CRREL-80-20

Results of impulse radar studies of sea ice give support to the concept of a sea ice model in which the ice bottom is composed of an array of lossy parallel plate waveguides. The fundamental relation between the average bulk brine volume of sea ice and its electrical and strength properties is discussed as is the remote detection of under-ice current alignment. It was found that (1) the average effective bulk dielectric constant is dependent upon the average bulk brine volume of the sea ice; (2) sea ice anisotropy, arising from a bottom structure of crystal platelets with a preferred c-axis horizontal alignment, can be detected by radio echo sounding measurements made not only on the ice surface but also from an airborne platform; (3) the effective coefficient of reflection from the sea ice bottom decreases with increasing average effective bulk dielectric constant of the ice, decreases with increasing bulk brine volume, and is typically one to two orders of magnitude lower than the coefficient of reflection from the ice surface; and (4) the losses in sea ice increase with increasing average bulk brine volume. (Author)

AD-A092 134/6 PC **A05**/MF **A01**
Naval Postgraduate School, Monterey, CA.
A Statistical Study of Monthly Storminess and Sea Surface Temperature Anomalies over the North Pacific Ocean.
Master's thesis,
William H. Little. Jun 80, 82p

Empirical Orthogonal Function (EOF) and cross-correlation analysis were used to examine the interrelationships between anomalous wind forcing and anomalous sea surface temperature (SST) over the North Pacific Ocean for the period January 1969 through December 1978.

AD-A092 144/5 PC **A09**/MF **A01**
North Carolina Univ. at Chapel Hill.
The Gulf Stream Meanders Experiment. Hydrographic Data Report. R/V Endeavor Cruises, EN-040 (2-8 August 1979) EN-045 (16-23 November 1979),
John M. Bane, David A. Brooks, and Mark J. Ignaszewski. Sep 80, 179p
Contract N00014-77-C-0354, Grant NSF-OCE77-25682
Prepared in cooperation with Texas A and M Univ., Rept. no. TAMU-REF-80-10-T. Sponsored in part by Grant NSF-OCE79-06710.

This report documents hydrographic data collected during two cruises in R/V Endeavor in 1979: EN-040 (2-8 Aug) and EN-045 (16-23 Nov). The hydrographic data from two additional cruises during the first 1979 field phase of the project are documented in a separate report. The hydrographic measurements were made in support of a moored instrument program. The data from the moored instruments (primarily current meters) are reported in separate data reports for the winter and summer 1979 field phases. The objective of the hydrographic program was to vertically and horizontally map the temperature and salinity fields of the Gulf Stream, hopefully as a meander passed through the moored instrument array. The hydrographic measurements were made in conjunction with mooring deployment and recovery operations. The data reported here were collected with a Plessey 9040 STD system attached to a Niskin rosette sampler equipped with Niskin sample bottles and reversing thermometers. In addition, many temperature profiles were made with a Sippican XBT System. Surface bucket samples were taken at most stations. Beyond the presentation of contoured fields of certain derived hydrographic quantities the data are not analyzed. Interpretation of the data is not provided here.

AD-A092 231/0 PC **A11**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Composition and Characteristics of Particles in the Ocean: Evidence for Present Day Resuspension.
Doctoral thesis,
Mary Josephine Richardson. Nov 80, 240p Rept no. WHOI-80-52
Contracts N00014-79-C-0071, N00014-74-C-0262
Sponsored in part by contract N00014-75-C-0291.

This study of particulate matter in the water column and the underlying surface sediments verifies the occurrence of local, present-day resuspension in the deep sea. The location of the major portion of this work was the South Iceland Rise, a region influenced by the flow of Norwegian Sea Overflow Water. Measured current velocities exceeded 20 cm/sec in the axis of the bottom current for the duration of the deployments, approximately two weeks. Suspended particulate matter (SPM) and light-scattering studies demonstrate that in the Iceland Rise area the correlation of the L-DGO nephelometer to concentration of SPM differs between clear water and the nepheloid layer. Correlations of light scattering to SPM concentration also differ regionally, but for predicting concentration from light scattering, regression lines at two locations are indistinguishable. A comparison of sediment-trap samples with box-core surface samples further supports present-day resuspension. Benthic foraminifera, iron-oxide coated planktonic foraminifera and the glacial, subpolar planktonic foraminifera (Neogloboquadrina pachyderma (sinistral)) in traps at 10, 100 and a few specimens at 500 mab, provide conclusive evidence for local resuspension.

AD-A092 476/1 PC **A05**/MF **A01**
Arctic Inst. of North America, Arlington, VA.
Concepts for Data Collection in the Arctic.
Final technical rept.,
Joseph A. Hatchwell. May 72, 78p
Contract N00014-70-A-0219-000, ARPA Order-1783

This report identifies, describes, analyzes, and evaluates new concepts for collecting and processing data and information gathered above, on, and under sea ice and contiguous land areas of the Arctic Basin, including manned and unmanned systems of varying sizes with both short-term and long-term operations. (Author)

AD-A092 484/5 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
Technical rept.,
Roger D. Flood, and Charles D. Hollister. 11 Mar 80, 15p Rept nos. WHOI-80-60, WHOI-CONTRIB-3985
Contract N00014-74-C-0262
Pub. in Marine Geology, v36 pM1-M9 1980.

No abstract available.

AD-A092 486/0 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
On Production and Dissipation of Thermal Variance in the Oceans.
Technical rept.,
Terrence M. Joyce. 8 Aug 79, 10p Rept nos. WHOI-80-57, WHOI-CONTRIB-4422
Contract N00014-76-C-0197
Pub. in Jnl. of Physical Oceanography, v10 n3 p460-463 Mar 80.

No abstract available.

8K. Seismology

AD-A091 911/8 PC **A03**/MF **A01**
Teledyne Geotech, Alexandria, VA. Seismic Data Analysis Center.
Spectral Ratios for Explosions in Salt.
Technical rept.,
Robert R. Blandford. 4 Apr 78, 29p Rept no. SDAC-TR-78-1
Contract F08606-78-C-0007, DARPA Order-2551

Comparison of the P-wave spectra at common stations from the events GNOME, SALMON, and three nuclear tests in salt in the USSR shows that amplitudes are greatly enhanced by shallow burial. The scaling theory of Mueller and Murphy partially accounts for the enhancement, but there remain major differences between theory and observation, particularly at frequencies above 1 Hz. If material properties of salt at the different sites are different then that, and not the depth, may have caused the difference. Effects of pp, consistent with a reflection coefficient of approximately 0.5, can be seen in the spectral ratios. (Author)

AD-A091 984/5 PC **A03**/MF **A01**
Teledyne Geotech, Alexandria, VA. Seismic Data Analysis Center.
Relationship between Ms and mb for Small Earthquakes in Uzbekistan, USSR.
Technical rept.,
John H. Gonez, and Ilkka T. Noponen. 13 Dec 79, 41p Rept no. SDAC-TR-79-9
Contract F08606-79-C-0007, DARPA Order-2551

The SRO station MAIO was used to obtain many measurements of P sub and LR from a sequence of aftershocks at Gazli, Uzbekistan in 1976, at a distance of 576 km. SP periods and amplitudes are analyzed to obtain the proper distance correction factor to yield m sub b. Eighteen events are measured to give an M sub s range 2.2 to 3.6, and m sub b range 3.6 to 5.0. The observations support the postulation that delta M sub s/delta M sub b is approximately equal 1 to at low magnitudes. The Gazli population overlaps a Eurasian teleseismic population, and is believed to be free of large error in determination of M sub s and m sub b. (Author)

AD-A092 457/1 PC **A09**/MF **A01**
Army Command and General Staff Coll., Fort Leavenworth, KS.
Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
Master's thesis,
Floyd J. Davis. 6 Jun 80, 189p AD-E750 037

This study tells the story of the involvement of the United States Army in the events surrounding the San Francisco earthquake and fire of 1906. During a period of approximately seventy-five days a force of over 5,000 soldiers, aided by sailors, Marines, and National Guardsmen, assisted civil authorities by fighting fires, treating the injured, delivering supplies, feeding the population, guarding the city, and providing shelter and clothing for refugees. The conclusion of the study is that the work of the Army in subduing the fire and in aiding in the relief effort was a noble peacetime accomplishment which well served the citizens of California and which enhanced the Army's reputation and honor. The story of the Army's contribution is one in which Ameri-

can soldiers and civilians alike may quite justly be proud because that contribution was made in the best spirit of the American tradition of subordination of the military to civilian authority. (author)

PB81-120081 PC **A13**/MF **A01**
Universities Council for Earthquake Engineering Research, Pasadena, CA.
Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980,
W. D. Iwan. 1980, 278p UCEER-6, NSF/RA-800246
Grant NSF-PFR77-20044

The purpose of this meeting was to provide a vehicle for the exchange of information related to current and projected university research in earthquake engineering and to evaluate progress in specific areas of research and establish goals and priorities for future work. One hundred and sixty-seven individuals attended the meeting representing 57 universities, various government agencies, and industries. There were six topically organized sessions consisting of research reports and a summary discussion. The written summaries of these reports, along with some summaries not presented orally, are presented. The research topics were as follows: ground motion; structural elements; soils and soil-structure interaction; seismic risk, seismic design and codes; experimental structural response; and analytical structural response.

PB81-850935 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Regional Seismicity. January, 1976-September, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Sep 80,
John H. Frey. Oct 80, 64p NERACEDBNT1388
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the global distribution of earthquakes into seismic regions or zones. Seismic risk, seismic design codes for structures, and seismic mechanisms are all covered. (Contains 53 citations.)

8L. Snow, Ice, and Permafrost

PB81-132789 PC **A03**/MF **A01**
National Oceanic and Atmospheric Administration, Ann Arbor, MI. Great Lakes Environmental Research Lab.
New Observations on the Daily Variations of Natural Ice Albedo.
Technical memo.,
S. J. Bolsenga. Jul 80, 42p NOAA-TM-ERL-GLERL-27, GLERL-CONTRIB-222, NOAA-80110401

Observations on the daily variation of ice albedo indicate a significant dependence of snow-ice and refrozen-slush-ice albedo on solar altitude under clear skies. Significant albedo variations were noted under variable cloudy conditions, but attempts to quantify these processes have been hampered by a lack of detailed data. Albedo variations of melting ice can be pronounced, and after substantial decay has occurred, the resultant albedo is a combination of ice and water reflectivity. Some measurements of near-infrared ice albedo indicate that diurnal variations are even more subtle in this spectral range than for the total solar spectrum and that many additional measurements are required to obtain even preliminary conclusions.

PB81-801615 PC **N01**/MF **N01**
National Technical Information Service, Springfield, VA.
Ice Fog. 1964-November, 1980 (Citations from the NTIS Data Base).
Rept. for 1964-Nov 80,
Robena J. Brown. Dec 80, 72p
Supersedes PB80-801160, and NTIS/PS-78/1124.

The bibliography includes citations relating to ice formation, modification, dispersal and forecasting. Problems of white outs and thermal pollution effects in arctic regions are discussed. (This updated bibliography contains 65 citations, 6 of which are new entries to the previous edition.)

8M. Soil Mechanics

AD-A092 014/0 PC **A04**/MF **A01**
Barron (Reginald A.), Guilford, CT.
Mathematical Analyses of Landside Seepage Berms.
Final rept.,
Reginald A. Barron. Sep 80, 62p WES/MP/GL-80-15
Contract DACW39-79-M-4486
See also Rept. no. AEWES-TM-3-424-VOL-1, AD-A012 771.

This study extends solutions for mathematical analyses of seepage berms presented in (Investigation of Underseepage and Its Control, Lower Mississippi River Levees,' October 1956, AD-A012 771. A plot of the required seepage berm width, B, versus the ratio of the permeability of the berm to the top blanket, K, for various safety factors indicates B is very sensitive to K for $K < \text{or} = 1$. When the uplift safety factor varies from 1.5 at the landside levee toe to 1.0 at the landside seepage berm toe, the berm width is only slightly greater than that for a uniform safety factor of 1.0. If the uplift safety factor is greater than 1.0 at the berm toe, then as the top blanket becomes thinner, the berm width becomes longer. Thus, other methods of underseepage control should be investigated to determine whether they may be more economical. When the seepage berm is impervious, the berm width is a maximum. When the seepage berm is infinitely pervious, the berm width is a minimum. Therefore, seepage berms should be constructed of the most pervious soils available (with adequate provisions for control of surface erosion and internal piping) in the interest of economy.

AD-A092 244/3 PC **A02**/MF **A01**
Cold Regions Research and Engineering Lab., Hanover, NH.
The Neumann Solution Applied to Soil Systems,
Virgil J. Lunardini. Oct 80, 13p Rept no. CRREL-80-22

The only complete, analytic solution for conduction problems with phase change is the Neumann solution. The Neumann solution is valid for phase change in a semi-infinite, homogeneous medium with a step change in surface temperature, starting from an initial temperature which can be different than or equal to the fusion temperature of the medium. The Neumann solution, when applied to soils, forms the basis of a number of formulae for calculating the depths of freezing or thawing. Widely used graphs were previously developed that are valid only when the ratios of the thermal conductivities and thermal diffusivities of the frozen and thawed soils are unity. In this report general charts, applicable to any property ratios, are developed. The figures have been drawn specifically for soil systems, but they are applicable to any material with appropriate property ratios. (Author)

AD-A092 352/4 MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.
Interaction Effects of Simultaneous Torsional and Compressional Cyclic Loading of Sand.
Final rept. 1 Jun 76-31 Dec 79,
Patrick M. Griffin, and William N. Houston. Dec 79, 340p UCB/EERC-79/34, ARO-13838.1-GS
Grant DAAG29-76-G-0257
Availability: Microfiche copies only.

An experimental research program based on laboratory test studies and scaled slope model tests was conducted with specimens of Monterey No. 0 sand. The principal objective of the research was to study the effects of interactive coupling during combined compression (normal) and shear loading on the response of sands to dynamic loading. The research program included the following experimental studies: (1) Resonant Column tests on cylindrically shaped specimens using longitudinal and torsional excitation, both separately and in combination. (2) Thin-walled Hollow Cylinder tests using longitudinal and torsional cyclic excitation, both separately and in combination. (3) Large scale shaking table tests on slope models, using horizontal and vertical cyclic excitation, both separately and in combination. (Author)

AD-B006 844/5 PC **A08**/MF **A01**
California Research and Technology, Inc., Woodland Hills.
Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
Final rept. 22 Apr-10 Oct 74,
M. H. Wagner, K. N. Kreyenhagen, and W. S. Goerke. 18 Jun 75, 161p CRT-2050-2, DNA-3537F
Contract DNA001-74-C-0222
Distribution limitation now removed.

A finite difference Lagrangian code calculation fo the firing of an earth penetrator into a soft soil site has been carried out. The penetrator was a 400-lb, 6.5-in. diameter steel projectile with an initial velocity of 500 ft/sec. The field tests were conducted in July 1974 at the DRES Site in Canada. The penetrator was treated as a ridig body in the code solution. A four-layer idealization of the target site was used.

PB81-120032 PC **A04**/MF **A01**
Purdue Univ., Lafayette, IN. School of Civil Engineering.
Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons,
A. F. Saleeb, and W. F. Chen. Jul 80, 75p CE-STR-80-9, NSF/RA-800207
Grant NSF-PFR78-09326
Presented at the May 28-30, 1980 North American Workshop on Limit Equilibrium, Plasticity, and Generalized Stress-Strain in Geotechnical Engineering.

Three formulation methods for elasticity based stress-strain relations for soils are reviewed. A non-linear hyperelastic constitutive model is described and applied to three types of soils--clays 'X' and 'Y' and Ottawa sand. A description of the procedure for determining the material constraints in the model has been made. Stress-strain relations for general straight line stress paths and for examples of stress paths in conventional soil tests are given. Incremenial forms of constitutive relations, an approximate method of modeling unloading-reloading behavior, and a failure condition are included for general nonlinear finite element analyses. Major conclusions are: (1) The proposed constitutive relations can model many characteristics of soil behavior; (2) Present formulation satisfies mathematical requirements when used for monotonically increasing load conditions; (3) Incremental forms of the model can be implemented easily in finite element codes for general analyses; (4) For the cases studied, the model's results are in general agreement with experimental results; (5) The model behavior for Ottawa sand is sensitive to changes in values of material constants; (6) Best results from the model are generally expected at low stress levels below failure; and (7) The present formulation cannot account for post-failure in strain-softening materials.

PB81-120065 PC **A04**/MF **A01**
Purdue Univ., Lafayette, IN. School of Civil Engineering.
Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
E. Mizuno, and W. F. Chen. Jul 80, 74p CE-STR-80-12, NSF/RA-800208
Grant NSF-PFR78-09326
Presented at the May 28-30, 1980 North American Workshop on Limit Equilibrium, Plasticity and Generalized Stress-Strain in Geotechnical Engineering.

Three types of soil models are described in this report: (1) nonlinear elasticity material model with the Mohr-Coulomb or the Drucker-Prager surface as failure criterion; (2) Mohr-Coulomb type of elastic-plastic material model with two different sizes of elliptical hardening cap which are defined respectively on the tensile meridian plane and the com-

pressive meridian plane; (3) Mohr-Coulomb type of elastic-plastic material model with an elliptical hardening cap whose size depends on the Lode angle theta. The following assumptions are made for the three types of models: (1) the linear elastic, hypoelastic or hyperelastic function is used in the elastic range for the isotropic or anisotropic material element; (2) the incremental plasticity theory is applied to calculate plastic strain increment during loading range. The concept of decomposition of stress state onto tensile meridian plane and compressive meridian plane is described.

PB81-123069 PC **A07**/MF **A01**
Virginia Polytechnic Inst. and State Univ., Blacksburg. Dept. of Engineering Science and Mechanics.
Seismic Stability Evaluation of Earth Structures.
Final rept.,
Mahendra P. Singh, and M. Ghafory-Ashtiany.
Nov 80, 135p VPI-E-80.30
Grant NSF-PFR78-23095

An analytical approach is proposed for seismic design evaluation of earth structures like foundations and slopes. The approach is based on random vibration principles. Seismic design inputs defined in terms of response spectra curves can be directly used. For verification of the proposed approach a comparative study of the results obtained by a rigorous nonlinear analysis approach and the proposed approach is conducted. It is observed that the proposed approach will provide a safe and conservative evaluation of an earth structure design for earthquake induced ground motions.

9. ELECTRONICS AND ELECTRICAL ENGINEERING

9A. Components

AD-A091 969/6 PC **A18**/MF **A01**
Stanford Univ., CA. Integrated Circuits Lab.
Computer-Aided Engineering of Semiconductor Integrated Circuits.
Final rept. 1 Jan 79-15 Feb 80,
J. D. Meindl, R. W. Dutton, J. F. Gibbons, C. R. Helms, and J. D. Plummer. Jul 80, 401p ICL-17-78, TR-DXG501-80, DELET-TR-79-0257-1
Contract MDA903-79-C-0257, ARPA Order-3709

Economical procurement of small quantities of high performance custom integrated circuits for military systems is impeded by inadequate process, device and circuit models that handicap low cost computer aided design. The principal objective of this program is to formulate physical models of fabrication processes, devices and circuits to allow total computer-aided design of custom large-scale integrated circuits. The basic areas under investigation are (1) thermal oxidation, (2) ion implantation and diffusion, (3) chemical vapor deposition of silicon and refractory metal silicides, (4) device simulation and analytic measurements. This report discusses the fourth year of the program. (Author)

AD-A092 076/9 PC **A04**/MF **A01**
Sertech Labs., Inc., Salem, MA.
Burn-In of Uncased Semiconductors. A Feasibility Study.
Final rept.,
James E. Hearl, and Samuel C. Lukens. Nov 79, 56p
Contract N00163-78-C-0332

The feasibility of burning-in uncased semiconductors has been demonstrated. Twelve quad 2-input NAND gates (type 5400) have been burned-in for 168 hours at +125 C in accordance with MIL-STD-883, Method 1005-1, Test Condition A. Eleven of the devices were retrieved in a physical condition suitable for subsequent use in conventional assembly operations, the twelfth having a corner broken off. The design of the carrier assembly and the special tooling required for assembly are described. (Author)

AD-A092 078/5 PC **A07**/MF **A01**
RCA Corp., Lancaster, PA. SSD-Electro-Optics and Devices.
Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
Final technical rept. 30 Jun 78-31 Mar 80,
B. B. Adams, M. F. DeVito, and R. E. Reed. Sep 80, 139p
Contract DAAK70-78-C-0120

RCA has successfully completed the fabrication and testing of fifteen sample devices under this contract. This report thoroughly describes and discusses the assembly and process procedures; test circuits and test results; and configuration management procedure. It also includes numerous detailed drawings and graphs to futher illustrate the ingenuity of this silicon Transcalent Rectifier. (Author)

AD-A092 079/3 PC **A07**/MF **A01**
RCA Corp., Lancaster, PA. SSD-Electro-Optics and Devices.
Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
Final technical rept. 2 Apr 79-30 Mar 80,
M. F. DeVito, S. W. Kessler, R. E. Reed, and D. R. Trout. Sep 80, 143p
Contract DAAK70-79-C-0019

The purpose of this test is to provide evidence of production contractor conformance to contractural requirements, reveal defects of workmanship or material nature that may reduce the effective operation of these vehicles in the field and to compare existing quality with previous standards. Two M840 Dolly Sets were provided for testing. The dolly sets each consits of a front and rear dolly trailer. The sets contain air-over-hydraulic brakes, air-spring suspension, automotive type shock absorbers, a quickly removable hinged towing bar, taillights and stoplights and standard military tires. Mechanical hand parking brakes are provided for the rear wheels. Each dolly is equipped with an independent, manually-operated hydraulically-actuated lifting/leveling system. A lifting leveling jack is connected between each lifting bracket and a torque tube arm. Two tilting jacks are mounted on each torque tube and may be actuated to align the transporter with the mating brackets on the shelter when on uneven terrain. Two hydraulically operated lifting jacks and two hydraulically operated tilting jacks are provided on each dolly for lifting and leveling a shelter. These jacks provide the means of installing the dolly set to the shelter when resting on the ground and to lift the shelter to a height of 17 inches for tactical deployment. The dolly set has a rated payload of 9000 lbs. The M840 Dolly Sets successfully met the requirements of the Performance Tests.

AD-A092 095/9 PC **A02**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings,
Jakub Grycan. 24 Oct 80, 24p Rept no. FTD-ID(RS)T-1143-80
Edited trans. of Elektronika (Poland) n9 p390-396 1973, by Jozef Figa.

No abstract available.

AD-A092 120/5 Not available NTIS
Texas Univ. at Austin. Dept. of Electrical Engineering.
Spectral Domain Analysis of Dominant and Higher Order Modes in Fin-Lines,
Lorenz-Peter Schmidt, and Tatsuo Itoh. 17 Mar 80, 6p ARO-16171.2-EL
Grant DAAG29-78-G-0145
Availability: Pub. in IEEE Transactions on Microwave Theory and Techniques, vMTT-28 n9 p981-985 Sep 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 150/2 PC **A02**/MF **A01**
Naval Research Lab., Washington, DC.
Physical Limitations and Design Criteria for a Solid-State Gyrotron.
Interim rept.,
A. K. Ganguly, and D. C. Webb. 24 Oct 80, 21p Rept no. NRL-8418

Scaling of conventional microwave sources to operate in the near millimeter wave (100-1000 GHz) portion of the electromagnetic spectrum is difficult and often impossible. Severe fabrication and heat dissipation problems are common. In the microwave tube area, workers at the Naval Research Laboratory and elsewhere have shown that the severity of these problems can be considerably reduced by employing the electromagnetically large gyrotron configuration, and kilowatts of continuous power have been generated at millimeter wavelengths. In this report we investigate the possibility of applying similar design principles to the development of solid-state gyrotron. In this report we review the physical mechanism that gives rise to oscillations and present the underlying mathematics. Numerous nonideal factors are considered; namely, a finite electron mean-free-path, injection of electrons which are not monoenergetic, metallic and dielectric ohmic losses in the resonant cavity, and presence of a finite electric field in the interaction region. Use of a reverse-biased Schottky tunnel barrier for electron injection is analyzed in detail and is found to be a promising structure for producing sufficient current to sustain oscillations. Calculations are based on InSb parameters, as this material appears best for this application because of its long mean-free path. The main conclusions of this study are that (a) with available materials it is unlikely that oscillations can be sustained; and (b) with three- to five-fold increase in the mean-free-path, oscillations appear possible, albeit at a very high frequency (approx. 1000 GHz). (Author)

AD-A092 320/1 PC **A05**/MF **A01**
Raytheon Co., Waltham, MA. Research Div.
Power FET Contact Technology.
Final technical rept. 1 Sep 78-31 Jul 80,
R. Mozzi, and Y. Tajima. Sep 80, 79p Rept no. S-2796
Contract N00014-78-C-0622

Unalloyed TiPtAu ohmic contacts were formed on n-type GaAs by preparing surfaces having over 10 to the 19th power carriers/cc prior to metal deposition. Two methods were used, vapor phase epilayer growth and pulse electron beam annealed (PEBA) selenium implants. The former method yielded specific contact resistivities .000008 < or = r(c) < or = .00009 ohm sq. cm and was successfully applied on power FET devices. Much lower resistivities, r(c) approx. 3 to the -7th power ohm sq. cm, were obtained by PEBA implants but difficulties associated with preserving channel layers through the PEBA exposure have precluded their application in a device configuration. (Author)

AD-A092 407/6 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Experimental Study of Contrast Utilizing a Vidicon.
Master's thesis,
Richard William Havel. Jun 80, 62p

A commercial multi-purpose closed circuit television camera system with a vidicon image tube was studied to determine its capability for measurement of contrast and visibility. A single line of the scan from the camera video output was extracted and examined with an oscilloscope. A derivation of system response was made and a comparison performed with laboratory data. Calibration of the field of view, for one particular television pick-up tube, revealed nonuniformities making resolution of 2 percent contrast difficult. Useful resolution results are expected with improvement of the pick-up tube or with employment of digital processing techniques. (Author)

Field 9—ELECTRONICS AND ELECTRICAL ENGINEERING

Group 9A—Components

AD-B012 737/3 PC **A05**/MF **A01**
David W Taylor Naval Ship Research and Development Center Annapolis MD Propulsion and Auxiliary Systems Dept
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
R. J. Flaherty, J. A. Kimball, and W. E. Pocock.
Jun 76, 92p Rept no. PAS-76-8
Distribution limitation now removed.

The critical factors involved in the selection of electrical insulating materials for deep ocean equipment are defined, and methods are presented for determining compatibility of electrical insulating materials under deep ocean application conditions. The values of critical properties of typical electrical insulating materials are given as they have been determined or are known from previous literature. Suggestions are also given on the applicability of typical electrical insulating materials for deep submergence applications. It is planned to revise and update the contents of this handbook periodically. (Author)

AD-B015 629/9 PC **A03**/MF **A01**
ITT Aerospace/Optical Div., Fort Wayne, IN.
Dynamic Color Scanner System.
Final rept. Jun 72-May 74,
Louis T. Hunkler. May 74, 44p AFAL-TR-74-151
Contract F33615-72-C-2071
Distribution limitation now removed.

A three-aperture image dissector television tube is employed in a three-color photographic film densitometer. Equipment was assembled to accept reel film up to 9 inches in width, measure density, accumulate measurements and generate histograms describing the film density distribution. Sample size at the film plane is 94 microns with the number of samples per histogram variable to 1,000,000. Each sample is classified as a density between 0.3 to 3.0 in 0.1 density increments. Histogram outputs are on oscillograph, paper tape and magnetic tape. Program details were reported in monthly and this final report as well as an equipment manual. (Author)

AD-B015 892/3 PC **A03**/MF **A01**
General Electric Co., Philadelphia, PA. Space Div.
Vidicon Modification Study.
Final rept. Jan-Jul 76,
Robert J. Boram. Jul 76, 26p AFATL-TR-76-92
Contract F08635-76-C-0167
DDC Form 55 not necessary for document request.
Distribution limitation now removed.

Electronic processing was performed on the video output from a standard vidicon camera using sample and hold modules and integrators. The objective of the equipment development was to square up the apparent MTF of the vidicon to compare with that of a CCD imaging device under conditions of low scene contrast. Improvement in resolution of low contrast targets was noted, but was less than expected (2:1). (Author)

AD-917 847/6 PC **A03**/MF **A01**
TRW, Inc., Lawndale, CA. Semiconductor Div.
Modulator Driver Transistor.
Final rept. 15 Jun 72-15 Dec 74,
P. C. Parekh. Mar 74, 49p AFAL-TR-74-27
Contract F33615-72-C-2092
Distribution limitation now removed.

This report covers the work on Air Force Contract F33615-72-C-2092, Modulator Driver Transistor. The objective of the contract was to develop a high-speed switching transistor capable of handling one ampere of collector current. A switching transistor capable of handling 850mA of collector current with turn-on and turn-off times of 1.3 nanoseconds and 2.2 nanoseconds, respectively developed. The transistor was capable of handling one ampere of collector current, however, degradation in turn-off time resulted. The transistor utilized TRW's crossgrid structure while process development included arsenic as an emitter dopant for small base width and high emitter efficiency. (Author)

AD-919 567/8 PC **A04**/MF **A01**
Perkin-Elmer Corp., Norwalk, CT.
Thin Film Optical Waveguide Technology.
Final rept. Apr 72-Oct 73,
Frits Zernike. Mar 74, 56p PE-11934, AFAL-TR-74-60
Contract F33615-72-C-1585
Distribution limitation now removed.

Passive thin film waveguide components investigated under this contract were: 1) coupled waveguides, 2) waveguide lenses, 3) taper couplers, 4) waveguides with more or less rectangular cross sections. The coupling between waveguides was investigated in detail, both theoretically and experimentally. Methods for making 3-dB couplers and switches are described. Different experimental methods of making waveguide lenses were attempted; however, only two were found to be useful: one produces a lens with rectangular contours but thicker in the center and the other produces a round domed lens. Different tapers were investigated. It was found that a well-defined narrow output (input) angle can be obtained by using a very slow taper. Waveguides with trapezoidal cross sections were produced by sputter-etching of slab type waveguides using photoresist masks. The necessary patterns in these masks were made by exposing the photoresist pattern with a focused beam from a He-Cd laser operating at 4416A. (Author)

AD-922 009/6 PC **A04**/MF **A01**
Rca Government and Commercial Systems Burlington Mass Aerospace Systems Div
Development of a High Resolution Kinescope Recorder.
Final rept. 1 Mar-1 Nov 73,
G. Stuart Pearce. 14 Jul 74, 64p AFAL-TR-74-41
Contract F33615-73-C-1134
Distribution limitation now removed.

The Air Force has been sponsoring development of high resolution image sensors, such as the High Resolution Electronic Camera, to provide reconnaissance and surveillance imagery in near real time. As progress has continued, the need for a small, transportable, high performance, hard copy recorder has increased. The High Resolution Kinescope recorder has been developed to meet this need.

AD-923 171/3 PC **A05**/MF **A01**
Rca Government and Commercial Systems Burlington Mass Aerospace Systems Div
Silicon Target Return Beam Vidicon.
Final rept. 16 Jul 72-15 Jan 74,
M. J. Cantella, R. E. Hoffman, R. L. Rodgers, G. J. Sandorfi, and O. H. Schade, Sr. Sep 74, 91p AFAL-TR-74-134
Contract F33615-72-C-1194
Distribution limitation now removed.

This program was concerned with development of an electrical input/output Si storage RBV of high resolution. Targets of 7,000 lines/height covering the full two-inch format were successfully fabricated and sealed off in complete RBV configurations. Detailed measurements were made using a variety of operating modes for 2 and 10 sec. write times. Performance demonstrated included 6,000 TVL/PH limiting resolution, linear Write/Read signal transfer characteristics, dynamic range in excess of ten square root of 2 gray steps, S/N ratio in the 30-50 range, and very good overall image quality. Written information was stored with little or no degradation for several days, and non-destructive readout in excess of two hours was obtained. A narrow-angle gun was designed and fabricated to obtain high duty-cycle, rapid cycle-rate operation. A factor of six improvement in prime capability down to 0.15 sec has been shown for the large Si storage target. Evaluation of the gun in ASOS RBV's included demonstration of full target prepare capability in a fraction of a second. Although the new gun does not contain a limiting exit aperture, read resolution performance is at least as good as obtained in standard guns with 1-Mil aperture. It is now feasible to design high-speed reconnaissance systems with desirable overlapping coverage and enhanced operator display. (Author)

AD-923 650/6 PC **A03**/MF **A01**
Magnavox CO Fort Wayne Ind Fort Wayne Div
Low Loss Wideband Acoustic Delay Line.
Final rept. 1 Jan 73-4 Feb 74,
Fred Y. Cho, and Bill J. Hunsinger. Jul 74, 50p FWD74-543, AFAL-TR-74-122
Contract F33615-73-C-1084
Distribution limitation now removed.

This development has resulted in a programmable, planar folded acoustic path surface wave delay line with programmable delay times ranging from 94 microsecond to 105 microsecond in 1 microsecond increments. The delay line has a 60 MHz 3 dB passband ranging from 105 MHz to 165 MHz, and a dynamic range of 50 dB. The volume of the packaged device, including gain to offset the insertion loss and switches to obtain the programmable delay times, is five cubic inches. The planar, folded propagation path delay line having two sets of multistrip reflectors and track changers is fabricated on a YZ-lithium niobate plate. The propagation path length is about three times the active crystal length. Techniques used to fabricate the large field (5in. x 0.75in.), high resolution (130 lines/mm) photomask with an alignment compensation technique are discussed. (Author)

CONF-800980-20 PC **A02**/MF **A01**
Fermi National Accelerator Lab., Batavia, IL.
Protection for Low Current Superconducting Coils Wound with Insulated Strand Cable.
J. Satti. Sep 80, 5p
Contract AC02-76CH03000
Applied superconductivity conference, Santa Fe, NM, USA, 29 Sep 1980.

The insulated strand cable concept for winding of low current superconducting coil leads to an ideal quench protection by induction coupling. A superconducting secondary loop was made within a cable of a 6.2 Henry dipole coil. When quenching occurred, current was induced in the secondary strand above the critical value. The normal strand quenched the whole cable due to good thermal contact. The secondary loop works as a heater turned on as the wire becomes normal throughout the coil. With a well spread quench, the energy dissipation density is decreased thus preventing local burnout. The mechanism is possible because of close coupling that is present in the insulated cable as in bifilar winding. For the coil tested a 12 strand cable was used, thus a favorable 11 to 1 turn ratio was obtained for the primary to secondary. The superconductor in the secondary had a lower resistance until the critical current was achieved. A theoretical explanation is described for a simplified circuit. Test on the dipole coil with four individual shells showed that the one shell protected with the induced coupling heater always had a more rapid reduction of current. The induced coupling heater tested and explained in this paper works automatically and does not rely on mechanical or electrical devices. (ERA citation 06:001642)

PAT-APPL-6-185 471 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
P+N Gallium Phosphide Photodiodes.
Patent Application,
Alice M. Chiang. Filed 9 Sep 80, 11p AD-D007 860/0
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This application discloses a photodiode detector apparatus having a gallium phosphide ion implantation junction thereon to provide high quantum efficiency at wavelengths equal to or less than 0.5 micron incident wavelength while utilizing a shallow junction.

PATENT-4 218 110 Not available NTIS
Department of the Navy, Washington, DC.
Connector-to-Connector Adaptor.
Patent,
Joseph J. Giannaula, and Kenneth P. Reever.
Filed 4 Apr 79, patented 19 Aug 80, 3p AD-D007 866/7, PAT-APPL-6-026 982
Supersedes PAT-APPL-6-026 982, AD-D006 035.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

The present invention relates to electrical connectors, and more particularly to a connector-to-connector adaptor. Accordingly, the present invention provides a connector-to-connector adaptor which permits the adaptation from one connector interface to another connector interface without modification of electrical equipment interfaces. An

adaptor shell has a plurality of contact shafts which replace the respective contacts of the dissimilar connectors to be joined. The adaptor shell is joined to one connector and the contact shafts are inserted first into the openings of one connector and then the other connector. Finally the adaptor shell is joined to the other connector. A pin is integrally connected to one end of the contact shaft and a socket contact with retention means is integrally connected to the other end.

PATENT-4 227 111 Not available NTIS
Department of the Navy, Washington, DC.
Flexible Piezoelectric Composite Transducers.
Patent,
Leslie E. Cross, Robert E. Newnham, and Doyle P. Skinner. Filed 28 Mar 79, patented 7 Oct 80, 4p AD-D007 870/9, PAT-APPL-6-024 827
Supersedes PAT-APPL-6-024 827, AD-D006 146.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

A flexible, low-density piezoelectric transducer utilizes a PZT-polymer composite that is formed with the two phases three-dimensionally interpenetrant. The ceramic PZT microstructure, which is produced by a replication process that in one embodiment reproduces the structure of a coral species, is filled with silicone rubber and thereafter its transverse connectivity is broken by a light shearing deformation to give it flexibility. (Author)

PB81-119844 Not available NTIS
National Bureau of Standards, Washington, DC.
Space Applications of Superconductivity: Resonators for High Stability Oscillators and Other Applications.
Final rept.,
S. R. Stein. Jul 80, 10p
Contract NASA-A-437018(JM)
Pub. in Cryogenics 22, n7 p363-372 Jul 80.

This is the last in a seven part series on the potential applications of superconductivity in space. Superconducting oscillators have achieved better frequency stability than any other device for averaging times of 10 s to 1000 s. This high stability results from the use of solid niobium resonators having Q factors greater than 10 to the 10th power. Such oscillators have direct applications as clocks and spectrally pure sources. They may also be used for accurate measurements of many physical quantities and to perform a variety of experiments on fundamental constants, relativity, and gravity waves.

PB81-121006 Not available NTIS
National Bureau of Standards, Washington, DC.
Evaluation of High Efficiency CsI and CuI Photocathodes for Soft X-Ray Diagnostic.
Final rept.,
E. B. Saloman, J. S. Pearlman, and B. J. Henke. Mar 80, 5p
Sponsored in part by Department of Energy, Washington, DC.
Pub. in Applied Optics 19, n5 p749-753, 1 Mar 80.

The photoefficiency of CsI and CuI photocathodes have been measured for photons in the energy range 22-240 eV (50-560 A). The within batch and batch-to-batch variation in photoefficiency has been studied as has the sensitivity of the samples to storage under dry nitrogen. The effect of exposure to air has been investigated. The shape of the photoefficiency curves has been found to agree quite well with that expected from the photoabsorption cross sections of the materials. CsI in particular appears to be useful as a detector for use in soft x-ray diagnostics especially for use as a narrow band detector in the 100 eV photon energy range where peak measured efficiencies can exceed 300%.

PB81-855090 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Varistors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Howard L. Ogushwitz. Aug 80, 62p NERACEI NT0244
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss the theory, production, and applications of various types of varistors. (Contains 058 citations.)

PB81-855108 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Varistors. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 74-May 80,
Howard L. Ogushwitz. Aug 80, 30p NERACIAANT0244
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss the theory, production, and applications of various types of varistors. (Contains 25 citations.)

PB81-855363 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Ultrasonic Transducers. July, 1974-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jul 74-Jun 80,
William V. Sassi. Aug 80, 194p NERACEI NT0436
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss the characterization, design, development, and applications of ultrasonic transducers. Among the applications included are the followng: Clinical measurements of graft flows, thickness gauging of plastics and metals, and the determination of weld defects. (Contains 200 citations.)

PB81-855421 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Cathode Ray Tubes. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 74-May 80,
Walter Van Put. Jun 80, 116p NERACIAANT0593
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover information on new capabilities of cathode ray tubes, such as color or monochromatic displays, editing, graphics, on board floppy disks, digital cassettes, and built-in microprocessors. (Contains 102 citations.)

9B. Computers

AD-A091 910/0 PC **A04**/MF **A01**
Teledyne Geotech, Alexandria, VA. Seismic Data Analysis Center.
Revision of the Detection/Analysis System at SDAC.
Technical rept.,
W. C. Dean, A. R. Hill, P. Kovacs, J. Martin, and D. M. Miller. 26 Mar 80, 66p Rept no. SDAC-TR-79-10
Contract F33600-79-C-0549, DARPA Order-2551

This report presents the computational requirements for a new detection processor and regional analysis system at the Seismic Data Analysis Center (SDAC). In addition, the report considers the computational requirements to support a research environment at the SDAC which would include the detection/regional analysis capability as well as seismic research, development of new signal processing algorithms and techniques, and seismic experiments and applications of data base management techniques. Based on these requirements, various alternative computer systems are reviewed, including the existing computer facilities at the SDAC. If the new system is to be devoted to the DP/regional analysis service routinely, then the SEL 32/77 computer with its high input/output and computational bandwidth and its plug compatibility with all IBM peripherals at SDAC will be the most cost effective choice. Moreover, there will be no need to convert old SDAC programs since all software for this application will be new. On the other hand, if the new computer must serve a research environment calling for on-line DP and regional analysis experiments, batch processing for seismic research, and continual softwre development of new processing algorithms and techniques, then the IBM 4341 is the best choice. The new IBM computer is compatible with all existing IBM peripherals at SDAC, can run virtually all existing SDAC programs without modification, and offers the most complete software development tools and versatile operating systems. The additional capital cost of this machine would be more than offset by savings in software conversions and development.

AD-A091 923/3 PC **A02**/MF **A01**
Georgia Inst. of Tech., Atlanta. School of Information and Computer Science.
Software Project Forecasting.
Richard A. DeMillo, and Richard J. Lipton. Oct 80, 19p Rept no. GIT-ICS-80/09
Contract N00014-79-C-0231
Prepared in cooperation with Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.

We have argued that a major use of software metrics is in the forecasting problem for software projects. By analogy with weather forecasting, we may characterize the current state of knowledge in software forecasting as the gathering of portents. While these may be useful and sometimes decisive in project management, they are prescientific and qualitative. Further, it seems very unlikely that the portents can be developed into a useful theory of forecasting. To develop scientific forecasting tools, a rational way of predicting the future from historical primary data is required. It is also important that the primary data and the measurements used to obtain it satisfy some basic methodological requirements -- for example, the hypotheses developed from the measurements should be meaningful in the sense implied by measurement theory. The statistical approach, seeking to predict future events on the basis of historical patterns, seems to be an attractive short range approach to the forecasting problem. The goal of the exact method is to be able to apply largescale computation to many micropredictions to synthesize a quantitative forecast.

AD-A091 928/2 PC **A05**/MF **A01**
Goodyear Aerospace Corp., Akron, OH.
STARAN Image Processing.
Final rept. Sep 79-Oct 80,
R. W. Lott, S. G. Stadelman, and R. O. Faiss. Oct 80, 91p GER-16902, ETL-0243
Contract DAAK70-79-C-0221

The primary objective of this work was the implementation of a label relaxation edge enhancement algorithm for on the STARAN computer. The algorithms were designed to allow for various user defined control parameters so as to be able to evaluate the method of edge enhancement under different conditions. During software execution, STARAN handles the bulk of the computational tasks while the CDC 6400 serves as the I/O and process controller. The CDC 6400 control and I/O software is given access to the STARAN software via calls to CDC resident FORTRAN subroutines. As a result, the general CDC 6400 FORTRAN programmer can incorporate the functional capabilities of the developed STARAN subroutine into his own program. The algorithm develops likelihood (probability estimates) values of directed edges in an image for 8 compass directions. 3x3 correlation reference patterns are used to develop the initial likelihood values. The likelihood values are then iteratively enhanced by a relaxation process. The likelihood enhancement process involves two basic steps: (1) the best link of likelihood ratio estimates between adjacent neighbor pixel paris is established. In the second step, the best link pair information is used to update the edge likelihood ratio. The CDC;STARAN system can process one iteration in under one minute, thus providing an interactive evaluation capability.

AD-A091 957/1 PC **A03**/MF **A01**
Electronics Research Lab., Adelaide (Australia).

Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
Technical rept.,
J. C. Gwatking. Jun 80, 43p Rept no. ERL-0143-TR

The standard MVS operating system supplied for use on IBM 370 computers does not erase or protect data residing on areas of disk that have been released for reuse. This report discusses the problem and describes efficient techniques that have been developed and installed at the DRCS which automatically erase all data when disk space is released by its owner. This has involved modifying the disk space management software and included some restructuring to eliminate contention for system resources while data is erased. (Author)

AD-A091 959/7 PC **A11**/MF **A01**
General Electric Co., Lanham, MD. Space Div.
Advanced Satellite Hardware/Software System Study.
Contract rept.,
R. Spencer, R. Ho, F. Kabat, D. M. Smith, and R. Fries. 15 Apr 80, 237p 80SDS4213, ETL-0225
Contract DAAK70-79-C-0009
Errata sheet inserted.

This report provides an overview of the Landsat-D program and the anticipated requirements of the Corps of Engineers for the application of Landsat data to operational programs. A general discussion of the candidate data analysis requirements, including data input and output and other data preparation processes provides a complete description of the capabilities which will be required of an advanced satellite hardware/software image analysis system. A brief overview of the currently available hardware technology provides a basis for the synthesis of the hardware system design, and an example of a typical software structure, based on that for an actual system, is presented. Descriptions of three candidate system architectures provide examples of different approaches to the development of a system meeting the Corps of Engineers requirements, and the problems of communication between remoted terminals and a host processor are addressed, together with the problems related to the dissemination of data to remotely located independent systems. A brief cost analysis indicates the system cost drivers, and shows how cost tradeoffs may be made in developing a specific system. A candidate system design for the Corps of Engineers is presented, based on the concept of independent systems with capabilities tailored to local requirements. (Author)

AD-A091 993/6 PC **A03**/MF **A01**
Maryland Univ., College Park. Computer Vision Lab.
Image Approximation from Grayscale 'Medial Axes'.
Technical rept.,
Shyuan Wang, Angela Y. Wu, and Azriel Rosenfeld. May 80, 33p Rept no. TR-900
Contract DAAG53-76-C-0138, DARPA Order-3206

Several types of gray-weighted 'medial axes' have been defined. This paper shows that one of them, the min-max medial axis, can be used to reconstruct good approximations to the original image based on a relatively small amount of information. (Author)

AD-A091 994/4 MF **A01**
Maryland Univ., College Park. Computer Science Center.
Architecture for Higher Level Digital Image Processing.
Quarterly status rept. no. 7,
Arden Helland, and Josh Hung. 29 Feb 80, 142p
Contract DAAG53-76-C-0138
Prepared in cooperation with Westinghouse Defense and Electronics Systems Center, Baltimore, MD. Systems Development Div.
Availability: Microfiche copies only.

This report demonstrates results of the one-dimensional, three-label relaxation process. The process is easily reduced to two labels; this is used to demonstrate the properties of relaxation as analyzed in the sixth quarterly report. The results are shown to confirm the analysis regarding speed of convergence, threshold and stability. Relaxation converged to stable results only when the net alike coefficients are equal; best results are obtained with the fewest iterations when the unlike coefficients are zero. The three label process provided correct segementation results even when the input image contained less than three distinct subpopulations. (Author)

AD-A091 995/1 PC **A02**/MF **A01**
Maryland Univ., College Park. Computer Vision Lab.
Gradient Magnitude as an Aid in Color Pixel Classification.
Technical rept.,
Alan Broder, and Azriel Rosenfeld. Jun 80, 9p Rept no. TR-906
Contract DAAG53-76-C-0138, DARPA Order-3206

When pixels in a black-and-white image are classified by thresholding their gray levels, gradient magnitude information can be used in various ways as an aid in thresholds selection. This note deals with the use of color gradient magnitude as an aid in classifying pixels based on their colors or spectral signatures. (Author)

AD-A091 996/9 PC **A03**/MF **A01**
Maryland Univ., College Park. Computer Vision Lab.
Pixel Classification Based on Gray Level and Local 'Busyness'.
Technical rept.,
Philip A. Dondes, and Azriel Rosenfeld. Mar 80, 31p Rept no. TR-874
Contract DAAG53-76-C-0138, DARPA Order-3206

An image can be segmented by classifying its pixels using local properties as features. Two intuitively useful properties are the gray level of the pixel and the busyness, or gray level fluctuation, measured in its neighborhood. Busyness values tend to be highly variable in busy regions; but great improvements in classification accuracy can be obtained by smoothing these values prior to classifying. An alternative possibility is to classify probabilistically and use relaxation to adjust the probabilities. (Author)

AD-A092 067/8 PC **A08**/MF **A01**
IBM Federal Systems Div., Arlington, VA.
Division Real Time Applications Report (DIVRAS), Software Functional Description.
Rept. for 3 Jan-3 Aug 77.
3 Aug 77, 169p
Contract DAAG39-77-C-0055

This document contains functional requirements for two application areas and their external interfaces that are candidates for inclusion in the Army's Tactical Operations System (TOS) at division level. The Targeting and Maneuver Applications comprise the Division Real-Time Applications (DIVRAS). The DIVRAS functional requirements are specified in terms of these three areas: (1) External Interfaces, (2) Targeting Application, and (3) Maneuver Application. Further definition of software functions necessary to implement these applications is provided in the form of detailed descriptions of three major subsystems: (1) Communications Processing, (2) Data Base Management, and (3) Graphics Processing. The application functions provide a user oriented definition of the processes necessary to accomplish the real-time targeting and maneuver display activities; the software support functions offer representative processing capabilities necessary to support the applications.

AD-A092 075/1 PC **A02**/MF **A01**
Maryland Univ., College Park. Computer Vision Lab.
Surfaces in Three-Dimensional Digital Images.
Interim rept.,
David G. Morgenthaler, and Azriel Rosenfeld.
Sep 80, 25p TR-940, AFOSR-TR-80-1154
Grant AFOSR-77-3271

This is one of a series of reports on the digital geometry of three-dimensional images, such as those produced by computed tomography. In this report we define simple surface points and simple closed surfaces, and show that any connected collection of simple surface points form a simple closed surface, thus proving a three-dimensional analog of the two-dimensional Jordan curve theorem. We also show that the converse is not a theorem (in contrast to the two-dimensional case) and discuss more complex surfaces types. (Author)

AD-A092 103/1 PC **A02**/MF **A01**
Royal Signals and Radar Establishment, Malvern (England).
POSER - A Process Organisation to Simplify Error Recovery,
J. A. McDermid. Jan 80, 8p RSRE-MEMO-3249, DRIC-BR-72727

This memorandum describes a process organisation which is proposed for use in the construction of fault - tolerant, real-time computer systems. The background to this proposal is outlined in (1). The organisation is conducive to automatic checkpointing and error recovery. It is implementable on distributed computer systems, and the application programmer need not be aware whether processes to which he is communicating are in the same computer or not. The organisation comprises processes and channels which are analagous (though not identical) to those used by MASCOT (2). No shared data areas (pools in MASCOT terminology) are provided, and so communication between processes must be achieved entirely by message passing via the channels. The operation mode proposed is one of data flow at the highest level (process and channel interactions). Essentially the processes are conventional sequential programs. The channels simply move data, provide buffering, and produce the required process connectivity. This organisation is advocated as it makes the causal relations between the process and channel activations clear and thus facilitates automatic checkpointing and (backward) error recovery. The organisation may not yield very efficient implementations of certain types of application, but the efficiency has yet to be evaluated. The organisation as described here has been implemented within a multi - computer simulation in Algo168RT (3), (4) and some attempt will be made to instrument this simulation in order to try to measure efficiency. (Author)

AD-A092 104/9 PC **A02**/MF **A01**
Royal Signals and Radar Establishment, Malvern (England).
Microwave Frequency Memory,
C. M. Boyne. Mar 80, 16p RSRE-MEMO-3257, DRIC-BR-74217

This memorandum is concerned with a frequency memory system which has an unlimited storage time. Such a system was built, having a set-on accuracy to within 10 MHz in a bandwidth of 500 MHz minimum, for a single RF input pulse of 100 nsec duration or greater. To achieve this performance, two multimode oscillators (MMOs) were combined. One of these oscillators has a coarse set-on accuracy in a wide band, whilst the other had a finer set-on accuracy in a narrower band. Several theoretical accounts of MMO behavior are contained in the literature 1, 2, 3. Essentially the memory is achieved by setting an oscillator close to the frequency of an input signal, such that the oscillator remains on that frequency when the input signal is removed. (Author)

AD-A092 137/9 PC **A06**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Design of a System Initialization Mechanism for a Multiple Microcomputer.
Master's thesis,
John Lee Ross. Jun 80, 102p

This thesis presents a design for a system initialization mechanism for a multiple processor system. The design is based upon a system of microprocessors (specifically the Intel 8086) being used with a set of application processes, as is common in many real time applications. The design is based upon the concepts of explicit communicating processes and explicit memory segmentation - although it does not require full hardware segmentation. With the goal of simplifying the system initialization function, this thesis segregates the required initialization actions into three distinct phases. The specific phase for each action is determined by

which phase provides the most supportive environment for that particular action. While the initialization mechanism described in this thesis was developed for a particular real-time application, the design concepts described are applicable to a variety of hardware and operating system configurations.

AD-A092 146/0 PC **A04**/MF **A01**
SRI International, Menlo Park, CA.
Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.
Final rept. 22 Sep 78-21 Nov 79,
Jay M. Tenenbaum. Jun 80, 72p ETL-0229
Contract DAAK70-78-C-0114

This report evaluates the capabilities of a new class of image-processing systems, known generically as video stream processors (VSPs). VSPs are an outgrowth of image display technology; image data from the display memory are streamed at video rates through a digital-processing unit and back to memory for subsequent display or further processing. This architecture serially simulates a parallel-array processor and is capable, in principle, of executing any locally parallel operation, such as convolution and edge detection, at a fraction of the cost of a truly parallel system. Our evaluation begins with a general discussion of the architecture and use of VSPs that highlights the fundamental concepts and vast application potential of this class of machines. This discussion is based on a hypothetical VSP design in order to avoid artificial constraints imposed by design limitations of any particular commercial product. The hypothetical design also serves as a standard against which current implementations can be evaluated. The report next summarizes our experience with the IP-5000 Image Array Processor, currently the most advanced commercially available VSP. The IP-5000 design is critiqued in the context of the hypothetical design, followed by a presentation of experimental results at SRI. The concluding discussion analyzes the IP-5000's limitations and proposes design refinements that would significantly improve its utility. (Author)

AD-A092 153/6 PC **A03**/MF **A01**
Maryland Univ., College Park. Computer Science Center.
Architecture for Higher Level Digital Image Processing.
Quarterly status rept. no. 6,
Arden Helland. 31 Oct 79, 29p
Contract DAAG53-76-C-0138
Prepared in cooperation with Westinghouse Defense and Electronics Systems Center, Baltimore, MD. Systems Development Div.

This report analyzes the segmentation properties of the Peleg relaxation scheme for the one-dimensional, two-label case. It is shown that if the probability of either label is identically zero, then that label probability will remain identically zero for all iterations. However, if the label probabilities are non-zero, then the label probability at each iteration will either increase toward unity or decrease toward zero, depending on whether the average probability of the neighborhood is above or below a threshold determined by the relationship of the compatibility coefficients. Further analysis of the boundaries between regions of different labels shows that boundary stability requires that the net effective coefficients for both labels be equal. In addition, it is shown that the speed at which ambiguity is resolved is maximized if non-zero compatibility coefficients are allowed for alike labels. There has been no indication that increased speed alters the results. Extensions to multiple-label cases are discussed. (Author)

AD-A092 166/8 PC **A04**/MF **A01**
Logistics Studies Office (ALMC), Fort Lee, VA.
Security Assistance Data Element Catalog (SADEC).
Final rept.,
Peter J. Higgins. Sep 80, 61p

This report describes the work to compile a single catalog of security assistance related data elements from several systems. Regulatory guidance is discussed as well as problems discovered in the abbreviations and definitions of some data elements. The major recommendations are to designate the US Army Security Assistance Center as custodian of security assistance data elements and to require system developers to adhere to the documentation standards in DOD Standard 7935.1-S. (Author)

AD-A092 182/5 PC **A02**/MF **A01**
Purdue Univ., Lafayette, IN. School of Electrical Engineering.
PASM: A Reconfigurable Multimicrocomputer System for Image Processing.
Interim rept.,
Howard Jay Siegel. Apr 80, 7p AFOSR-TR-80-1087
Grant AFOSR-78-3581

As a result of the microprocessor revolution, it is now feasible to build multimicroprocessor systems capable of performing image processing tasks more rapidly than previously possible. There are several types of parallel processing systems. An SIMD (single instruction stream - multiple data stream) machine typically consists of a set of N processors, N memories, an interconnection network, and a control unit (e.g. Illiac IV). The control unit broadcasts instructions to the processors and all active ('turned on') processors execute the same instruction at the same time. Each processor executes instructions using data taken from a memory with which only it is associated. The interconnection network allows interprocessor communication. An MSIMD (multiple-SIMD) systems is a parallel processing system which can be structured as two or more independent SIMD machines (e.g. MAP). An MIMD (multiple instruction stream - multiple data stream machine typically consists of N processors and N memories. where each processor can follow an independent instruction stream (e.g. C.mmp). As with SIMD architectures, there is a multiple data stream and an interconnection network. A partitionable SIMD/MIMD system is a parallel processing system which can be structured as two or more independent SIMD and/or MIMD machines.

AD-A092 216/1 MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Considerations for an Assembler Scheduled Multi-Microprocessor System.
Master's thesis,
Richard Lee Stewart. 26 Aug 80, 118p Rept no. AFIT-CI-80-41T
Availability: Microfiche copies only.

A parallel suitability or processability checker was incorporated into pass one of an INTEL 8080 cross assembler. For an assembler level source program, it yields a suitability factor for parallel processing, a jump structure analysis, and the nodes of Ramamoorthy's Loop Free Program Graph shown on the assembly language program source list. This information can be used to construct the Loop Free Program Graph. Eight assembly language source programs were analyzed to test the suitability checker and investigate favorable characteristics of assembly language loops with respect to parallel processability. Suggestions are made for further development of a parallel task recognizer for assembly language program using Ramamoorthy's connectivity analysis method. Design considerations are outlined for development of an assembler scheduled multi-microprocessor system. The machine would execute source program partitions in parallel on a production basis a large number of times. This would be possible after a combined assembly and schedule of the load modules. Applications envisioned are microprocessor based controllers or instruments that would achieve increased speed at less cost by performing such operations as input, calculations, retrieval, and output simultaneously. Also, economical machines could be designed to study aspects of parallel processing for large scale computers and high level languages.

AD-A092 224/5 PC **A04**/MF **A01**
White Sands Missile Range, NM. Instrumentation Directorate.
Automated Reading of Videotape.
Final rept.,
Raul G. Machuca. Nov 80, 75p Rept no. STEWS-ID-80-2

This report describes the concepts and software which are used in a prototype videotape reader being developed at WSMR. The goal is to read from one frame of video the position of the target and the three angular rotations of the target. This is done by first making a contour of the target from a frame of video. The Fourier descriptors of the contour are then computed and normalized. (Author)

AD-A092 230/2 PC **A05**/MF **A01**
Ohio State Univ., Columbus. Computer and Information Science Research Center.
Design and Analysis of Relational Join Operations of a Database Computer (DBC).
Technical rept.,
David K. Hsiao, and M. Jaishankar Menon. Sep 80, 96p Rept no. OSU-CISRC-TR-80-8
Contract N00014-75-C-0573

This paper repeats in detail the algorithm earlier employed in the database computer (DBC) in order to perform relational equality joins. Two improvements of the algorithm are proposed herein. The first improvement is achieved by adding a new memory component, called the C-memory, for each processor of the algorithm. The C-memory is used to store the results of the join operation. Also, it is a vital component during the execution of a m-way join operation. The second improvement involves the replacement of a single associative memory (AM) by several smaller associative memories (ams). Two advantages accrue as a result of this replacement. First, we show that each of the ams needs to operate at a slower rate than the single AM. This implies that we may use random-access memory (RAM) to realize ams, instead of the true and expensive associative hardware. The second advantage is due to an improvement in the complexity of the join operation when the ams are used. It is shown that the time complexity of the join is linear in the cardinalities of the source, target and result sets (relations). We therefore postulate that no join algorithm can have better time complexity than this. The paper also provides a thorough queueing analysis of the join algorithm as it is carried out in a specialized DBC component known as the post processor (PP).

AD-A092 265/8 PC **A04**/MF **A01**
California Univ., Davis. Signal and Image Processing Lab.
Design and Implementation of Multi-Input Adaptive Signal Extractions.
Final rept. 1 Jun 79-31 May 80,
William A. Gardner, and Michael A. Soderstrand. 31 Jul 80, 54p SIPL-80-11, AFOSR-TR-80-1054
Contract F49620-79-C-0086

This covers research on design and implementation of novel adaptive digital signal processors for signal extraction (i.e., reduction of noise, interference, and sitrotion). The signal; extractor configurations and adaptive adjustment schemes considered are extensions and generalization of prior art (viz., the FIR digital filter and the LMS adjustment algorithm) that consist of various combinations and interconnections of conventional adaptive filtering and noise cancelling configurations and associated adaptive adjustment schemes. The methods of implementation considered are based on speed-cost efficient Residue Number System arithmetic, and include Read Only Memory table look-up, and microprocessors and minicomputers for hardware control and for software implementation. The major goal of the research are improvements over prior art in signal extraction performance (as measured by signal distortion, signal-to-noise ratio and mean squared error) and in the cost of implementation and speed of operation. Results on both design and implementation of configurations and adjustment schemes are described.

AD-A092 282/3 PC **A12**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Production Rule Systems as an Approach to Interpretation of Ground Sensor Information.
Master's thesis,
Dennis Michael Jackson. Jun 80, 270p

Knowledge-based production systems, which are based on Artificial Intelligence concepts, offer distinct advantages in the representation, analysis, and correlation of information in certain problem areas. This thesis presents a detailed design and implementation of a prototype knowledge-based

production system which interprets information from unattended ground sensors. Background, rationale, system objectives and system structure are discussed. Representation of knowledge and the program control structure are emphasized. Finally, the details of implementation and a discussion of the results obtained are presented. (Author)

AD-A092 293/0 PC **A05**/MF **A01**
Computer Systems Management, Inc., Arlington, VA.
The Design, Development, Demonstration and Transfer of Advanced Command and Control (C2) Computer-Based Systems.
Final rept. 5 Nov 79-30 Sep 80,
James F. Wittmeyer, III. 30 Sep 80, 78p Rept no. CSM-80-05
Contract MDA903-80-C-0155, ARPA Order-3829

The conduct of research into the nature and use of advanced command and control (C2) computer-based information, decision, forecasting, training and readiness systems requires efforts in the C2 computer-based systems design, development, demonstration, transfer, and documentation areas. This report examines these areas and discusses a multiple PDP 11/70- and minicomputer-based research configuration. (Author)

AD-A092 294/8 PC **A03**/MF **A01**
Massachusetts Inst. of Tech., Cambridge. Artificial Intelligence Lab.
A Hypothetical Monologue Illustrating the Knowledge Underlying Program Analysis.
Memorandum rept.,
Howard E. Shrobe, Richard C. Waters, and Gerald J. Sussman. Jan 79, 30p Rept no. AI-M-507
Contracts N00014-75-C-0643, N00014-75-C-0661

Automated Program Analysis is the process of discovering decomposition of a system into sub-units such that the behavior of its parts. Analysis can be employed to increase the explanatory power of a program understanding system. We identify several techniques which are useful for automated program analysis. Chief among these is the identification and classification of the the macro-scale units of programming knowledge which are characteristics of the problem domain. We call these plans. This paper presents a summary of how plans can be used in program analysis in the form of a hypothetical monologue. We also show a small catalogue of plans which are characteristic of AI programming. Finally, we present some techniques which facilitate plan recognition. (Author)

AD-A092 301/1 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Detailed Design of the Kernel of a Real-Time Multiprocessor Operating System.
Master's thesis,
Warren James Wasson. Jun 80, 137p

This thesis describes the detailed design of a distributed operating system for a real-time, microcomputer based multiprocessor system. Process structuring and segmented address spaces comprise the central concepts around which this system is built. The system particularly supports applications where processing is partitioned into a set of multiple processes. One such area is that of digital signal processing for which this system has been specifically developed. The operating system is hierarchically structured to logically distribute its functions in each process. This and loop-free properties of the design allow for the physical distribution of system code and data amongst the microcomputers. In a multiprocessor configuration, this physical distribution minimizes system bus contention and lays the foundation for dynamic reconfiguration. (Author)

AD-A092 377/1 PC **A03**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
WNDWBX: Tektronix Plotting on CDC.
Technical rept.,
Ronald D. Anderson. Sep 80, 28p ARBRL-TR-02266, AD-E430 530

WNDWBX is an interactive plotting program accessible through a single Fortran CALL. It uses given input data to generate curves and label axes. Titles, new axis dimensions, and curve labels can be supplied interactively. The user is not required to have plot software knowledge or experience.

AD-A092 404/3 PC **A11**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Dynamic Linking in a Microcomputer Environment.
Master's thesis,
Gerald Bertram Blanton. Sep 80, 249p

This thesis presents the detailed design for a dynamic linker suitable for microcomputer operation. The design exhibits the usual property of dynamic linking in that the binding of interprocedure symbolic references to virtual addresses is deferred until the symbolic reference is first encountered during process execution. The design includes the specifications of dynamic linker modules and data structures. Furthermore, an overview of necessary operating system support is presented along with a detailed discussion of all additional translator output required. Hardware features desirable (but not necessary) in a dynamic linking environment are reviewed. Dynamic linking without translator support and unlinking of an object (from a process address space) are investigated. A subset of the dynamic linker design (not including the unlinking capability) was implemented on an Intel 8080 microprocessor as a demonstration of the feasibility of the concepts introduced.

AD-A092 415/9 PC **A04**/MF **A01**
Air Force Weapons Lab., Kirtland AFB, NM.
Radiation Evaluation of the AM2901A Microprocessor.
Final rept.,
Bernd Deve. Aug 80, 65p AFWL-TR-80-19, AD-E200 606

This report describes the development of a program to perform a radiation evaluation and error analysis of the AM2901A bit-slice microprocessor. The integrated circuit (IC) manufacturer's functional and dynamic test sets were obtained and rewritten using algorithmic pattern generation programming techniques to run on an in-house MD-104 tester. The test procedure and radiation evaluation of the microprocessor are presented. The devices were tested in neutron, total gamma dose, and transient ionizing dose-rate environments.

AD-A092 441/5 PC **A08**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Diagnostic Software Development for a Real-Time Spectral Analysis System.
Master's thesis,
Brian J. Donlan. Apr 80, 175p Rept no. AFIT-CI-80-9T

This report deals with the development of diagnostic software for a real-time spectral analysis system. The report gives a description of the spectral analysis system and its associated maintainability and reliability problems. The diagnostic system is comprised of a read-only memory board containing a small operating system and diagnostic tests. Detailed descriptions and listings of the tests and operating system are provided. (Author)

AD-A092 468/8 Not available NTIS
Purdue Univ., Lafayette, IN. School of Electrical Engineering.
Syntactic Models in Pattern Recognition and Applications.
K. S. Fu. 1980, 12p
Availability: Pub. in Pattern Recognition in Practice, p303-314 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 489/4 Not available NTIS
Colorado State Univ., Fort Collins. Dept. of Electrical Engineering.
A Digital Image System for Atmospheric Research,
Michael Andrews, and Robert Fitch. 5 Apr 78, 21p ARO-13971.8-GS
Grant DAAG29-76-G-0324
Availability: Pub. in Computer and Electrical Engineering, v5 p345-363 1978 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-B007 943/4 PC **A06**/MF **A01**
Science Applications, Inc., El Segundo, CA.
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
Users manual Nov 74-Aug 75,
J. L. Farr, Jr., R. M. Traci, and E. D. Albano. Aug 75, 107p SAI-76-547-LA, AFFDL-TR-75-103
Contract F33615-74-C-3094
Distribution limitation now removed.

Computer programs are described which implement a small disturbance potential flow theory for the three-dimensional unsteady transonic flow about rectangular planar wings undergoing harmonic oscillations. The theory is based upon the treatment of the unsteady flow as a small perturbation to the steady transonic flow. Separating the perturbation potential into a steady and unsteady component results in a pair of coupled boundary value problems for the components. The governing equation for the steady perturbation potential is the usual nonlinear transonic potential equation and it is solved in computer program TDSTRN using the mixed differencing relaxation procedure of Murman and Cole. The governing equation for the unsteady perturbation potential is linear and, for the harmonic boundary disturbance considered, of mixed elliptic hyperbolic type depending on the local nature of the steady potential. Using a steady solution previously generated by TDSTRN computer program TDUTRN solves the unsteady potential equation by the same relaxation procedure. The solution procedures are found to be quite efficient, permitting the calculation of unsteady aerodynamic forces to engineering accuracy in a few minutes on a CDC 6600 computer. (Author)

AD-B031 430/2 PC **A02**/MF **A01**
Command and Control Technical Center, Washington, DC.
Generalized Monitoring Facility. Revision I. Installation Guide (W6.4.1).
Final rept.
1 Sep 78, 14p CCTC-TM-181-78-REV, SBIE-AD-E100117
See also AD-A059 937, AD-A059 938 and AD-A059 939.
Distribution limitation now removed.

This document provides all the information that is necessary for installation of the Generalized Monitor software. The Generalized Monitor Facility Users Manual should be referenced for details on the use of this software. (Author)

AD-923 431/1 PC **A03**/MF **A01**
Abacus Programming Corp Santa Monica Calif
The Improved JCVS.
Final rept. Feb 73-Mar 74,
Cal Jackson, and Leah Danberg. Sep 74, 37p APC-R-0070/09/00/00, RADC-TR-74-232
Contract F30602-73-C-0161
Distribution limitation now removed.

This technical report describes the JOVIAL J73 Compiler Validation System (JCVS-J73). The system is designed to measure the compliance of a specific JOVIAL J73 compiler with the language specification, Standard Computer Programming Language - JOVIAL (J73) dated 1 January 1973. The first section of this report contains an overview of the entire system. The second section describes the population file and, in particular, the modules produced to validate the legal language forms. The third section discusses the support system, designed to fully automate the validation process. The fourth section discusses transferability of the JCVS-J73 to a specific computer system. The fifth and final section deals with expanding the population file to include other types of tests. (Author)

AECL-6487 PC **A07**/MF **A01**
Atomic Energy of Canada Ltd., Chalk River (Ontario). Chalk River Nuclear Labs.
Basic Graphical Data Management System (BAGDAMS Version 1.0). User's Guide and Reference Handbook.
J. W. Weindorf. Jun 79, 136p
U.S. Sales Only.

BAGDAMS (BAsic Graphical DAta Management System) is a set of FORTRAN callable subroutines which provides mass storage data structuring and manipulation capabilities. Although primarily designed to facilitate the handling of graphical data files (files containing information to be displayed upon graphical hardware devices), BAGDAMS can also be used in many other applications requiring complex mass storage resident data structures. (Atomindex citation 11:529175)

CONF-8010106-2 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Interactive Code for Examining Hypothetical Distributions of Experimental Data.
D. E. Fields, and C. A. Little. 1980, 11p
Contract W-7405-ENG-26
Annual meeting of the Association for Computing Machines, Nashville, TN, USA, 27 Oct 1980.

An interactive computer code that produces both graphical and numerical descriptions of a set of data for the user's assumption of either a normal or a log-normal distribution is described. Numerical statistics calculated at the user's option are chi-square, Kolmogorov-Smirnov, and Pierson's correlation coefficient. The linearized cumulative-probability distribution of the data may be plotted, together with a least-squares fit, consistent with either the normal or log-normal assumption. Data input may be by named data file or via the user's terminal keyboard. The code is written in FORTRAN and runs on a Digital Equipment Corporation PDP-10 computer; typical central processor-unit execution time is about 0.3 s. (ERA citation 06:001774)

COO-2383-0070 PC **A04**/MF **A01**
Illinois Univ. at Urbana-Champaign. Dept. of Computer Science.
One-Leg Formulas for Stiff Differential Equations.
Q. M. Sheikh. Aug 80, 55p UIUCDCS-R-80-1013, UILU-ENG-80-1724
Contract AS02-76ER02383
Thesis.

There are several effective codes available for solving stiff ordinary differential equations. However, for certain problems these codes will produce reasonable-looking solutions that are not close to the desired solution. This problem can arise if the formula used is stable for unstable problems and completely ignores increasing components of the solution. Unfortunately, the backward differentiation formulas that are the most widely used stiff formulas suffer from this disadvantage. Linear multistep formulas which are stable in large portions of the right half-plane fail to detect the change in the eigenvalues from large negative values to large positive values unless the step size, h, is extremely small. New one-leg multistep formulas are presented that are generalizations of the backward differentiation formulas and whose regions of instability are potentially infinitely large. 6 figures, 5 tables. (ERA citation 06:001775)

COO-4596-T1 PC **A04**/MF **A01**
Radian Corp., Austin, TX.
Radian Remote Sampling System. Digital Processor System.
10 Mar 78, 64p
Contract AC02-77ET10081

This manual describes system start-up, software, initialization module, sampling module, and operator commands. The system is designed for use with air pollution monitors. (ERA citation 06:001777)

DOE/CS/30254-1 PC **A02**/MF **A01**
Texas Univ. at Austin. School of Architecture.
Continuing Development of the DEROB System. Quarterly Report, July 1, 1980-September 30, 1980.
F. Arumi-Noe. Oct 80, 16p
Contract AC02-80CS30254

The last module of the DEROB System has been reprogrammed and recoded in an effort to reduce the computational time and cost associated with using DEROB. Some preliminary tests have been carried out on the new program, and the tentative results show that the time of execution can be reduced anywhere from 7% to 40% of the time required by the previous version of DEROB. The variability in the improvement arises from the options specified by the user. Additional tests are being carried out to debug the program. When these are completed, a copy of the new code will be sent to the technical monitors at SERI. This report outlines the structure of the new program, derives the general form of the heat transfer equations used in this new version, and describes the properties of the convergence accelerator derived for this new version of DEROB. (ERA citation 06:000515)

DOE/ET/20108-T1 PC **A02**/MF **A01**
Martin Marietta Aerospace, Denver, CO. Denver Div.
SOLCOST Support and Maintenance. Quarterly Technical Status Report.
Jun 80, 22p MCR-80-500
Contract AC02-76ET20108

The Los Alamos Solar Load Ratio Method for passive solar heating was fully implemented as a stand-alone software package under the title SOLCOST-PASSIVE. The software includes a coupled economic analysis capability which was slightly modified (from the LASL methodology) to include variable fuel escalations in time. Three passive system types can be evaluated with the methodology, and also any combinations of the three. Temperature swings for direct gain systems can also be computed. The typical output from the program for a simple water wall passive system is shown. One of the useful outputs from the program is the table of Absorbed Solar Radiation Factors. This table allows the user to evaluate the monthly effect of nine different factors which combine to yield the solar radiation absorbed by the system. The format of the cash flow table is very similar to the current SOLCOST cash flow table. A column discounted cash flow values has been added to clarify the use of discounting. Other changes from the SOLCOST economics include the addition of resale value at the end of the ownership period and the addition of discounted payback times. (ERA citation 06:000516)

GEPP-TIS-534 PC **A02**/MF **A01**
General Electric Co., St. Petersburg, FL. Neutron Devices Dept.
Software for Communication Between a Hewlett Packard 9825 Process Control Computer and a Honeywell 66/60 Time Sharing Computer.
R. J. East, and J. F. Howell. 24 Oct 80, 10p
Contract AC04-76DP00656

The hardware and a computer program used to provide a convenient and efficient system of transferring data between a computer-controlled manufacturing process and a large-main-frame computer for permanent data storage and analysis are described. Data are transmitted from a test system using an HP9825 Process Control Computer to a remote Honeywell 66/60 Time Sharing Computer. The hardware/software system provides a maximum of convenience and flexibility along with visible prompting for the operator. A checksum is generated and transmitted with the data for error detection. 2 figures. (ERA citation 06:001778)

LA-UR-80-3099 PC **A02**/MF **A01**
Los Alamos Scientific Lab., NM.
Verification of Timing Routines.
L. R. Creel. 1980, 5p CONF-801004-3
Contract W-7405-ENG-36
Computer performance evaluation users group conference, Orlando, FL, USA, Oct 1980.

A method for verifying the validity of timing routines for benchmarking and other timing measurements at the Los Alamos Scientific Laboratory (LASL) is described. A program written for this purpose uses two methods. The first method compares stopwatch times and system-computed times, where a system-computed time is the result of a call to the system timing routine. The second method requires calculating elapsed machine cycles. The program is modular and uses standard Fortran. With only a few changes, it is possible across all LASL systems and can be used on non-LASL systems as well. A complete benchmark job mix should include a program of this type. (ERA citation 06:001782)

PB81-125783 PC **A09**/MF **A01**
National Bureau of Standards, Washington, DC.
Computer Science and Technology: An Analytic Study of a Shared Device Among Independent Computing Systems.
Final rept.,
Alan Mink. Nov 80, 180p NBS/SP-500-69
Library of Congress catalog card no. 80-600170.

Global queueing network performance models are developed for the increasingly important class of computer networks comprising a number of independent computing systems sharing a single resource. An extensive bibliography and survey of prior work relating to this topic are included. Analytic expressions of performance measures for this class of systems are derived from the general theory of multiclass queueing networks, and new computational algorithms for evaluating them are presented that are memory-space efficient (linear vs. exponential) compared with known algorithms for the general theory. This exact analytic model, called the Shared Central Server Model, incurs approximately the same exponential time complexity in its evaluation as do all models based on the general theory; because of this, a simple heuristic approximate model of this class of systems is also presented that is computationally efficient in both time and space. Modular expansion of this class of systems is investigated using the approximate model, and a useful relationship is derived between the number of additional independent computing systems and the incremental increase in capability of the shared resource required to maintain the existing level of system performance.

UCRL-52916 PC **A03**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Interactive Graphics, the Design Process, and Education.
F. J. Norton. Sep 80, 32p
Contract W-7405-ENG-48

The field of design and drafting is changing continuously - its parameters are ever shifting and its applications are increasing. The use of Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM) is becoming increasingly common in industry. However, instruction in CAD and CAM has in general not been incorporated into university curricula. This paper addresses the need for increased instruction in interactive graphics at the student level, and particularly in conjunction with the design process used by engineers, designers, and drafters. The development of three-dimensional graphical models using CAD is seen as a vital part of product development. Applications to printed circuit design and numerical control (NC) operations are discussed. Effective educational programs in the use of CAD must relate to designers, users, and managers and may be developed either by industry or academia. Possible approaches to new programs include coursework, projects involving CAD, and special collaborative efforts between industry and academic institutions. 1 figure. (ERA citation 06:001788)

9C. Electrical and Electronic Engineering

AD-A092 141/1 PC **A06**/MF **A01**
Naval Ocean Systems Center, San Diego, CA.
Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
Final rept. Jul 79-Jan 80,
C. F. Buman. Apr 80, 102p Rept no. NOSC/TD-356

Electronic design and development of a high torque-to-inertia servosystem for stabilizing a sensor system are described. The design philosophy leads to a low-cost/high-performance system. The stabilizing element developed is universal and has application for (1) missile guidance, (2) surveillance, and (3) tracking sensor systems. The servo design is based on math models and is used for electronic design implementation and evaluation. (Author)

AD-917 204/0 PC **A19**/MF **A01**
Hughes Aircraft CO Canoga Park Calif
Aircraft Avionics Tradeoff Study.
Final rept. Mar-Sep 73,
R. N. Furtaw, D. T. Edson , R. P. Teutsch, and J. S. Steiner. Nov 73, 433p ASD/XR-73-19
Contract F33615-73-C-4137
Distribution limitation now removed.

The results of studies into digital system architectures, applicable to next-generation avionics systems, are presented in this report. Representative requirements are developed for a lightweight fighter and a close air support system, both assumed to be operational in late 1978; and a long range strategic bomber of the 1980's. Alternative digital system architectures are defined and comparative data among these architectures presented. A life cycle cost methodology, used in developing the comparative data, is also discussed. Alternate approaches to software modularity, and verification and validation are developed and comparative data among these approaches presented. An assessment of the technology required to support the digital system architectures, and the timeframe compatibility between the availability of this technology and the digital architectures is also addressed. (Author)

AD-923 272/9 PC **A14**/MF **A01**
Sci Systems Inc Huntsville Ala Advanced Systems Dept
Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
Final rept. 16 Apr 73-16 Feb 74,
Mark H. Hoffman, Jerry L. Perry, James P. Gross, and James R. Stansberry. Aug 74, 306p
AFAL-TR-74-132-Vol-1
Contract F33615-73-C-1222
Distribution limitation now removed.

This report consists of two volumes. Volume I is concerned with the definition and design of standard interfaces between avionics subsystems and a multiplex data bus. These interfaces are embodied in the form of modular Remote Terminals, as described in this volume. The interface and data flow requirements of the Night AX, A-7D, and advanced A-7D avionics suits are identified and analyzed. A Remote Terminal design is presented which is based on computer-aided analyses of requirements, as well as detailed analyses of various design aspects of the terminal. Recommendations for future study and changes to MIL-ST-1553 are suggested, and their impact on the Remote Terminal Design is assessed. Volume II contains complete signal flow listings for the Night AX, the A-7D and an advanced A-7D, the three systems analyzed in the study. In addition, it includes detailed descriptions of computer programs used in the analysis of subsystem data flow and interface requirements, and detailed listings of results output by the computer. Due to the size of this volume and its contents, it was not published for distribution. (Author)

PB81-855132 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Stepper Motors. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jun 74-May 80,
Howard L. Ogushwitz. Jun 80, 27p
NERACIAANT0275
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography describe the performance, application, control, and construction of variable reluctance stepper motors. (Contains 019 citations.)

9D. Information Theory

AD-A091 954/8 PC **A06**/MF **A01**
Lee (J. S.) Associates, Inc., Arlington, VA.
Multi-Sensor Detection Study.
Final rept. Apr-Sep 80,
Leonard E. Miller. 30 Sep 80, 112p Rept no. JTR-80-02
Contract N60921-80-C-0107

The methods of complex Gaussian multivariate analysis are applied to the problem of detecting signals in noise using data from multiple sensors whose relative locations are arbitrary. Theory is used to predict detection performance in terms of minimum detectable signal (MDS). A computer program implementing the multivariate detection approach is described, demonstrating that computational requirements are modest and verifying theory by simulation. Significant improvements over single-sensor processing (reduction in MDS by a factor equal to the number of sensors) is shown for certain cases. (Author)

AD-A091 987/8 PC **A02**/MF **A01**
Rhode Island Univ., Kingston. Dept. of Mathematics.
Optimization of Multichannel Processing.
Final rept.,
Oved Shisha. Sep 80, 12p AFOSR-TR-80-1146
Grant AFOSR-77-3174

The subset selection algorithm is extended to search for a best subset from a large set of complex-valued basis functions. This algorithm is used to design digital finite-duration impulse response (FIR) filters having fewer coefficients than conventional FIR filters. An optimum conventional FIR filter is derived which has best uniform spacing of the fixed number of samples which are to be used, and examples are presented which show that, for the same number of coefficients, the complex-subset-selection filter can give better results than the optimum conventional filter. The complex subset selection method is also applied to estimation of the frequencies of sinusoids in the presence of noise. A windowing technique is introduced to increase the efficiency and accuracy of the algorithm for frequency estimates. The results are compared with Cramer-Rao bounds.

AD-A092 123/9 PC **A02**/MF **A01**
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
Memoryless Quantizer-Detectors for Constant Signals in m-Dependent Noise,
H. Vincent Poor, and John B. Thomas. 5 Nov 78, 12p ARO-16011.8-EL
Contract DAAG29-79-C-0024
Pub. in IEEE Transactions on Information Theory, vIT-26 n4 p423-432 Jul 80. Prepared in cooperation with Illinois Univ. at Urbana-Champaign, Contract DAAB07-72-C-0259. Sponsored in part by Grant NSF-ENG78-05880.

No abstract available.

AD-A092 128/8 PC **A04**/MF **A01**
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
Technical note,
Jae S. Lim, and Naveed A. Malik. 7 Aug 80, 55p
TN-1980-37, ESD-TR-80-92
Contracts F19628-80-C-0002, N00014-75-C-0951

A new iterative algorithm for the maximum entropy power spectrum estimation is presented in this report. The algorithm, which is applicable to two-dimensional signals as well as one-dimensional signals, utilizes the computational efficiency of the Fast Fourier Transform (FFT) algorithm and has been empirically observed to solve the maximum entropy power spectrum estimation problem. Examples are shown to illustrate the performance of the new algorithm. (Author)

AD-A092 226/0 MF **A01**
Rochester Inst. of Tech., NY. Dept. of Electrical Engineering.
Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
Technical rept.,
Vijay K. Jain, Tapan K. Sarkar, and Donald D. Weiner. Aug 80, 97p Rept nos. TR-80-4, TR-3
Contract N00014-79-C-0598
Availability: Microfiche copies only.

In this presentation, the data signal is processed in reverse-time by a cascade of first order digital filters to yield a family of information signals. The Gram matrix of these information signals is shown to contain the essential information on the poles of the signal. The entire procedure of the application of pencil-of-function method is thus noniterative. Examples presented demonstrate (i) noiseworthiness in the representation problem when data are corrupted by noise, and (ii) the effectiveness of the method in the approximation problem. Comparison of the method with the maximum entropy method (or linear predictor) and the Prony method is also included. (Author)

AD-A092 298/9 Not available NTIS
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
Image Restoration by Short Space Spectral Subtraction.
Journal article,
Jae S. Lim. 1980, 7p MS-5263, ESD-TR-80-178
Contract F19628-80-C-0002
Pub. in International Conference on Acoustics, Speech and Signal Processing, p444-448 Apr 80.

No abstract available.

AD-888 625/1 PC **A08**/MF **A01**
Radiation Inc Melbourne Fla
Redundant Area Coding Study.
Final technical rept. 5 Nov 70-5 May 71,
William M. Sillers, Larry W. Gardenhire, and Ed B. Glover. Sep 71, 166p 6752, RADC-TR-71-192
Contract F30602-71-C-0093
Distribution limitation now removed.

Redundant Area coding, when used in conjunction with data reduction coding schemes, will reduce by as much as 90 percent the amount of data required to transmit a photograph. Data reductions of this magnitude are particularly needed for use on limited bandwidth wireline links. This technique is primarily applicable where photographic data is being transmitted to a user who is interested in only a small portion of the photo; the remaining areas are required solely for orientation. The areas of interest are transmitted at high resolution while the orienting, or redundant, areas are sent at a low resolution, preserving only the prominent features. Typical uses would be the retransmission of reconnaissance data, weather information, environmental data, and pollution control data. This study presents, in detail, various approaches to redundant area coding together with potential hardware implementation. (Author)

9E. Subsystems

AD-A091 877/1 PC **A02**/MF **A01**
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
An Approach to Programmable CTD Filters Using Coefficients 0, +1, and -1,
Mark R. Bateman, and Bede Liu. 13 Sep 79, 7p
AFOSR-TR-80-1131
Grant AFOSR-76-3083
Pub. in IEEE Transactions on Circuits and Systems, vCAS-27 n6 p451-456 Jun 80.

No abstract available.

AD-A091 902/7 PC **A02**/MF **A01**
California Univ., Berkeley. Electronics Research Lab.
Research in Monolithic, Signal-Processing Circuits.
Final rept. 1 May 77-31 Aug 80,
R. G. Meyer, and D. O. Pederson. Oct 80, 6p
ARO-14698.6-EL
Grant DAAG29-77-G-0132

This report summarizes research results in monolithic signal processing circuits. New approaches to monolithic crystal oscillator design are described together with new circuits for temperature-stable monolithic voltage-controlled oscillators. A major new theory of noise in switching oscillators has been developed and applied. In device research, a new ion-implanted buried reference diode has been devised. A publication list describing this work is included together with a list of associated Ph. D. and M.S. reports. (Author)

AD-A091 904/3 PC **A02**/MF **A01**
Colorado Univ. at Boulder.
Hardware Realizations for Digital Signal Processing.
Final rept. 1 Sep 78-31 Aug 80,
Richard A. Roberts. Oct 80, 10p ARO-15974.1-EL
Grant DAAG29-78-G-0188

Good digital filter realizations for hardware implementations, in narrowband filtering applications should have low roundoff noise, low coefficient sensitivity, and freedom from overflow oscillations. The hardware implementations presented here incorporate the above properties into a highly modular structure which can perform computations in pipeline fashion. That is, after an initial delay an output sample is obtained for each input sample. The realization and implementations discussed here contain more multipliers than direct form realizations. However, by using shorter word lengths because of their increased performance and distributed arithmetic implementations (instead of multiplier structures) these implementations can have less total hardware complexity. (Author)

AD-A091 933/2 PC **A04**/MF **A01**
Atomic Weapons Research Establishment, Aldermaston (England).
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
M. Jones. Jul 80, 54p AWRE-O-21/80, DRIC-BR-75017

An equivalent circuit model is presented for a helical compressed magnetic field generator. The emphasis has been placed on producing a model which has a short computer run time. Magnetic energy losses due to non-linear field diffusion are taken into account, together with the effects of magnetically-induced conductor motion. Examples of the computer code results are given, together with a comparison with experimental data. (Author)

AD-A091 952/2 PC **A10**/MF **A01**
RCA Solid State Technology Center, Somerville, NJ.
Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
Final technical rept. 29 Sep 78-29 Jun 79 on Phase 1,
Kevin Cunniff. Aug 80, 209p RADC-TR-80-177
Contract F19628-78-C-0178

The objective of this research was to obtain radiation, reliability, and performance data on monolithic test structures containing MNOS memory transistors and n-p-n bipolar transistors. The data indicates that the devices performed acceptably at 100,000 rads (Si). Thin-oxide structures performed satisfactorily after exposure to 500,000 rads(Si). Thus, if these devices were combined into an EAROM memory circuit, a hardness level above 100,000 rads should result. Performance, reliability, and breakdown characteristics were measured and are consistent with parameter values that would be useful for an EAROM.

AD-A092 099/1 PC **A02**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
Ways for Providing a High-Speed Analog-to-Digital Converter with Wide Dynamic Range,
L. A. Dybitskiy, B. I. Shvetskiy, and Yu. V. Yuzevich. 20 Oct 80, 7p Rept no. FTD-ID(RS)T-1228-80
Edited trans. of Regional'nyy Nauchno-Tekhnicheskiy Seminar po Statisticheskomu Analizu, Modelirovaniyu i Avotmatizatsii Kontrolya Ob'yektov s Konstruktivno Slozhnoy Strukturoy (USSR) n6 p86-90 1972, by S. Fizher.

No abstract available.

AD-A092 111/4 PC **A03**/MF **A01**
Oklahoma State Univ., Stillwater. Electronics Lab.
Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
Scientific rept. no. 2, Apr 79-Jan 80,
Richard F. Buck. 1 Feb 80, 49p AFGL-TR-80-0071
Contract F19628-78-C-0033

A miniature PCM encoder with 10-bit resolution was developed for use on the falling sphere experiment. Use of CMOS logic elements and an internal power supply resulted in a compact light-weight unit with minimal power demand suitable for use in the 10-inch diameter instrument, for measurement of atmospheric density. A bi-phase level coded system is used, with data input capability of fifteen bipolar (plus or minus 5vdc) analog data lines, each sampled 125 times per second. Subcommunication of up to seven housekeeping monitors (each 0 to +5 vdc, analog level) is also included. Details of circuit design and test evaluation of the prototype unit are covered; the report is written to serve as a technical manual for the equipment, and also covers an associated test set. (Author)

AD-A092 124/7 PC **A02**/MF **A01**
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
Optimal Design of FIR Digital Filters with Monotone Passband Response,
Kenneth Steiglitz. 22 Jun 78, 8p ARO-16011.10-EL
Contract DAAG29-79-C-0024, Grant DAAG29-75-G-0192
Pub. in IEEE Transactions on Acoustics, Speech, and Signal Processing, vASSP-27 n6 p643-649 Dec 79. Sponsored in part by Grant NSF-GK-42048.

No abstract available.

AD-A092 131/2 PC **A02**/MF **A01**
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
A Note on Variable Recursive Digital Filters,
Kenneth Steigltiz. 8 Sep 78, 4p ARO-16011.12-EL
Contract DAAG29-79-C-0024, Grant DAHC04-75-G-0192
Pub. in IEEE Transactions on Acoustics, Speech, and Signal Processing, vASSP-28, n1 p111-112 Feb 80. Sponsored in part by Grant NSF-GK-42048.

No abstract available.

AD-A092 309/4 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Thermal Analysis and Design of Air Cooled Electronic Circuit Boards Using a Desktop Computer.
Master's thesis,
Ricky Allen Foltz. Jun 80, 136p

A thermal design procedure for air cooled electronic circuit boards has been developed for the Hewlett-Packard Model 9845 desktop computer. The system of interactive programs, called THERMELEX, performs thermal analysis of printed circuit boards to predict either junction temperatures for given power dissipation levels or the maximum power levels for given junction temperature limits. The system includes the following features: totally interactive with all input in question and answer format; simple data verification and correction capabilities; ability to store and retrieve circuit board descriptive data totally under program control; and wide variety of output formats including tabular and graphical. By using internal selection of heat transfer correlations, the THERMELEX system depends only on input of physical parameters for thermal predictions. (Author)

AD-A092 316/9 PC **A06**/MF **A01**
Ohio State Univ., Columbus. ElectroScience Lab.
Airborne Antenna Pattern Code User's Manual.
Interim rept.,
W. D. Burnside, and T. Chu. Sep 80, 108p ESL-711679-2, RADC-TR-80-302
Contract F30602-79-C-0068

This report describes the use of a computer code to analyze antenna mounted on aircraft fuselage. Ram jet configurations can be handled as a special case by this code. The pattern can be taken in terms of an arbitrary conical cut. The organization of the code, definition of input and output data, multiple finite plate approach to simulate the structures on aircraft and various examples are presented. The analysis is based on the geometrical theory of diffraction, and various computed patterns are compared with experimental results. (Author)

AD-B039 121/9 PC **A06**/MF **A01**
Hughes Aircraft Co., Culver City, CA. Radar Microwave Lab.
Conical Phased Array Antenna Investigations.
Final rept.,
A. T. Villeneuve. Apr 79, 107p Rept nos. HAC-FR-79-27-850, HAC-REF-E0010
Contract N00019-77-C-0358
Also available as Rept. no. HAC-REF-2753/1691. DDC Form 55 not necessary for document request.
Distribution limitation now removed.

For missile seeker radars, the use of mechanically scanned antenna systems becomes increasingly difficult as the requirements for the aerodynamic and electrical performance of missiles become more demanding. One possible alternative to the use of mechanically scanned antennas lies in the application of flush-mounted slot antenna systems on metallic cones or ogival surfaces. These antenna systems would be inertialessly scanned in the required directions. The curvature of the particular conformal surfaces and the positional relationships of the radiating elements, however, introduce many problems which are different than those associated with planar electronically controlled arrays. As a consequence of these positional relationships, there may be no element that can be considered 'typical' so that impedances, patterns, and polarizations may vary significantly among the elements, in contrast to the conditions that are obtained in planar arrays for elements not too near the edge. In addition, since the radiating elements are not all similarly oriented, there may be a significant cross polarized component in the array pattern that could interfere with the desired system operation.

AD-887 376/2 PC **A02**/MF **A01**
TRW Systems Group, Redondo Beach, CA.
LSI Correlator.
Quarterly rept. no. 9, 1 Jun-31 Aug 71.
31 Aug 71, 13p Rept no. TRW-13133-6009-RO-00
Contract N00039-69-C-0557
See also quarterly rept. no. 8, AD-885 590L.
Distribution limitation now removed.

The 64-bit correlator is in the fabrication phase. The primary yield problems have been solved and completely functional correlators tested. Negotiations were completed to modify the hardware deliverables to forty 64-bit correlators. (Author)

AD-890 094/6 PC **A02**/MF **A01**
TRW Systems Group, Redondo Beach, CA.
LSI Correlator.
Quarterly rept. no. 10, 1 Sep-30 Nov 71.
30 Nov 71, 17p Rept no. TRW-131333-6010-RO-00
Contract N00039-69-C-0557
Distribution limitation now removed.

Twelve 64 bit correlators were delivered. The fabrication of correlators has been transferred into a new laboratory area which provides a higher degree of cleanliness for the semiconductor processing and photoresist operations. (Author)

AD-892 041/5 PC **A19**/MF **A01**
Rca Government Communications Systems Div Camden N J
Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.
Final technical rept. Nov 68-Aug 71,
L. Kolodin, I. Susskind, and N. Van Delft. Feb 72, 433p RADC-TR-72-27-Vol-1
Contract F30602-69-C-0050
See also Volume 2, AD-892 042L.
Distribution limitation now removed.

The report details the study, design, development, fabrication and evaluation of a feasibility model Integrated Circuit and Message Switch (ICMS). The objective of the program was to provide assurance that the conepts of combined real-time circuit and store-and-forward message switching, together with an advanced digital signaling and supervision plan, would fulfill the requirements of future military communications switching needs. (Author)

AD-892 042/3 PC **A08**/MF **A01**
Rca Government Communications Systems Div Camden N J

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
Final technical rept. Nov 68-Aug 71,
L. Kolodin, I. Susskind, and N. Van Delft. Feb 72, 172p RADC-TR-72-27-Vol-2
Contract F30602-69-C-0050
See also Volume 1, AD-892 041L.
Distribution limitation now removed.

Contents: Availability runoffs of ICMS by state probability model; Failure rate determination by use of reliability; Matrix test results; Average traffic calculations ICMS experimental model; Transfer function (Type A); Transfer function (Type B); Programming flow charts; Generalized message switch programming flow charts for input-output service; Overall executive control routine.

AD-892 277/5 PC **A03**/MF **A01**
TRW Systems Group, Redondo Beach, CA.
LSI Correlator.
Quarterly rept. no. 11, 1 Dec 71-29 Feb 72. 30 Nov 70, 27p Rept no. TRW-13133-6011-RO-00
Contract N00039-69-C-0557
See also Quarterly Rept. no. 10, AD-890 094L. DDC Form 55 not necessary for document request.
Distribution limitation now removed.

Concurrently with the 64 bit epitaxial correlator development, a 64 bit triple diffused correlator was developed. Testing shows this latter design to be functional and producible at reasonable yields. Circuits are being fabricated and tested. (Author)

AD-894 759/0 PC **A03**/MF **A01**
Rome Air Development Center, Griffiss AFB, NY.
Testing of 19.2 KB/S MODEM.
Technical rept.,
John B. Evanowsky, and William D. Alexander, Jr. Apr 72, 37p Rept no. RADC-TR-72-87
Distribution limitation now removed.

A breadboard model of a 19.2 KB/S MODEM was tested over various simulated wireline channels at RADC's Digital Communications Experimental Facility (DICEF). This report contains the test procedures employed and the results obtained for all tests performed. (Author)

AD-900 343/5 PC **A03**/MF **A01**
Rome Air Development Center, Griffiss AFB, NY.
Thin Film Hybrid Pulse Width Discriminator Circuit Fabrication.
Technical rept.,
Charles J. Dixon. May 72, 42p Rept no. RADC-TR-72-118
Distribution limitation now removed.

This report describes the in-house fabrication of a small quantity of pulse width discriminator circuits in thin film form. Special attention is given to the problems of undercutting while etching and variations in sheet resistivity of the resistive films. (Author)

AD-900 818/6 PC **A05**/MF **A01**
TRW Systems Group, Redondo Beach, CA.
LSI Correlator.
Final rept. 25 Apr 69-30 Jun 72.
1 Jun 72, 81p
Contract N00039-69-C-0557
Distribution limitation now removed.

The epitaxial, Schottky clamped cermet film, multilevel metal (64 BC II) correlator and the triple diffused resistor, single level metal (64 BC III) correlator both meet the specifications. The 64 BC III has exhibited superior yields and is therefore the best candidate for further fabrication. For applications involving data rates of 20-30 MHz or lower, the triple diffusion technology would offer the highest yield and probably the best choice. For data rates above 20-30 MHz the epitaxial technology is the best choice. (The maximum data rate of the triple diffused structure may increase in time; however, it is presently viewed that the epitaxial structure will continue to offer a higher data rate capability due to the relative device performance.)

AD-912 789/5 PC **A07**/MF **A01**
Monsanto Research Corp., Dayton, OH. Dayton Lab.
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
Final rept. 26 Jul 71-26 Jan 73,
Ralph S. Mueller, Fred J. Rosenbaum, and William E. Hord. Aug 73, 128p MRC-DA-343-Pt-1, AFAL-TR-73-250-Pt-1
Contract F33615-72-C-1034
Prepared in cooperation with Washington Univ., St. Louis, Mo. and Trans-Tech, Inc., Gaithersburg, Md.
See also Part 2, AD-912 790L.
Distribution limitation now removed.

The significance of this research and development to the Air Force is the finding that Coplanar Waveguide (CPW) can be used for integrated reciprocal ferrite phase shifters. Studies considered the use of Arc-Plasma Sprayed ferrite and dielectrics in TEM-like phase shifter design. Analysis of operation is given showing that deviation occurs as a result of coupling to higher order modes. Flux drive switching is studied and the relations between the flux density and the magnetic field which describe the ferrite magnetostatic hysteresis loop, including minor loop trajectories are given. These relations allow much improved modeling of latched phaser operation. Extensive experimental results are shown for CPW reciprocal phasers, including the effects of housings on performance. A new slabline coax-to-CPW transition is also described. Best results obtained in C-band include nearly 70 deg/in. latched phase shift for a one-inch long device. Numerous measurements indicate that the CPW attenuation is about 0.55 db/In. in the range of 6.5-8 GHz. High power measurements show that power capability can be enhanced by 2 orders of magnitude by use of APS dielectric buffer layers between the center conductor and ferrite.

AD-912 790/3 PC **A07**/MF **A01**
Monsanto Research Corp., Dayton, OH. Dayton Lab.
Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
Final rept. 26 Jul 71-26 Jan 73,
Y. S. Wu, and Fred J. Rosenbaum. Aug 73, 127p MRC-DA-343-Pt-2, AFAL-TR-73-250-Pt-2
Contract F33615-72-C-1034
Prepared in cooperation with Washington Univ., St. Louis, Mo. and Trans-Tech, Inc., Gaithersburg, Md.
See also Part 3, AD-912 791L.
Distribution limitation now removed.

The significance of this research and development to the Air Force is the finding that MIC junction circulators can have octave bandwidths without sacrifice of other properties. The study began with a review of current theory and design practices. It was found that previous workers did not consider appropriate modes in the Green's Function, limited the range of coupling angle, and failed to consider the effects of fringe fields on the quarterwave transformers. This study considered the n= 0,1,2,3 modes, included the coupling angle as a variable, and developed two conditions for perfect circulation. Condition 1 defines the propagation constant-radius product (SR) while Condition 2 gives the substrate to disk impedance ratio at the junction. Both sets of curves are related to the anisotropic splitting ratio. The Condition 2 curve and the junction impedance curve can be made to overlap by proper choice of materials. The circulator can thus operate over a wide range of SR whereas by earlier design methods these were fixed values. Through proper choice of 4 pi Msubs octave bandwidths can be acheived. Experimental work has verified these findings and the device has been named the Continuous Tracking Circulator.

AD-912 791/1 PC **A05**/MF **A01**
Monsanto Research Corp., Dayton, OH. Dayton Lab.
Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
Final rept. 26 Jul 71-26 Jan 73,
Y. S. Wu, and Fred J. Rosenbaum. Aug 73, 95p MRC-DA-343-Pt-3, AFAL-TR-73-250-Pt-3
Contract F33615-72-C-1034
Prepared in cooperation with Washington Univ., St. Louis, Mo. and Trans-Tech, Inc., Gaithersburg, Md.
See also Part 4, AD-912 792L.
Distribution limitation now removed.

The significance of this work to the Air Force is the development of theory which shows that combining ferrites and dielectrics in stratified and/or coplanar configurations offers a route to novel band switching circulators, filters, and other various exotic devices. The use of arc-plasma spray fabrication makes economical fabrication feasiable. The propagation of electromagnetic energy in radial waveguides involving layers of ferrites and / or dielectics is examined. The operation of microstrip circulators using such media was predicted and a composite circulator built and tested. The device exhibited a 1 dB insertion loss over a 15 dB isolation bandwidth of 3.3 GHz in X-band. The two theoretical circulation conditions of Bosma were reformulated to account for the effects of the composite medium. Other geometries studied included the shorted junction circulator, the ring circulator, and the radially inhomogeneous circulator. It was found that increased bandwidth should be obtained with the shorted junction circulator while significant size reduction (about one half) is possible with a ring configuration. (Author)

AD-912 792/9 PC **A04**/MF **A01**
Monsanto Research Corp., Dayton, OH. Dayton Lab.
Ferrite/Dielectric High Power Phase Shifter Development. Part IV. Arc-Plasma Spray Fabrication and Material Studies.
Final rept. 26 Jul 71-26 Jan 73,
Douglas H. Harris. Aug 73, 73p MRC-DA-343-Pt-4, AFAL-TR-73-250-Pt-4
Contract F33615-72-C-1034
Prepared in cooperation with Washington Univ., St. Louis, Mo. and Trans-Tech, Inc., Gaithersburg, Md.
See also Part 1, AD-912 789L.
Distribution limitation now removed.

The significance of this portion of the work to the Air Force is the advancement of arc-plasma spray (APS) techniques, materials, and material processing which will effect economic fabrication of many ceramic microwave devices. This study deals with material and process as related to planar microwave devices and included MgMn and LiTi new ceramic substrate. Studies were made of the rapid grain growth of APS ferrite during anneal and correlated with hysteresis properties. It is concluded that the enhanced remanence is due to improved microstructure in which non-magnetic phases or voids are distributed throughout the material and not collected at grain boundaries.

AD-916 881/6 PC **A06**/MF **A01**
General Electric Co., Utica, NY. Aerospace Electronic Systems Dept.
Study of Integrated Thermionic Circuits for Aerospace Application.
Final technical rept. 5 Jun 72-5 Jun 73,
George T. Sendzuk, Dennis E. Berglund, and George W. Francis. Sep 73, 105p AFAL-TR-73-344
Contract F33615-72-C-2106
Distribution limitation now removed.

This report describes the study of the applicability of Integrated Thermionic Circuits (ITC) to data processing applications for aerospace systems in which nuclear and high temperature environments may be encountered. The specific systems which were selected as candidates for the study were in the area of aircraft engine control and strapped down or body bound inertial navigation. Limited temperature and mechanical tests were performed on Air Force furnished ITC shift registers and later integrated in an ITC demonstrator unit configured and fabricated to perform a rudimentary computational task. Various digital signal processor architectures including general-purpose (whole number) and special purpose (incremental) were examined and evaluated for the engine control and navigation applications. The results of the study program demonstrate the feasibility of the ITC technology in the implementation of special-purpose processor systems for dedicated applications such as engine control and navigation. The report also includes discussion of an ITC packaging method and recommended additional ITC building blocks which are required in addition to the basic shift register unit. (Author)

AD-917 846/8 PC **A05**/MF **A01**
Aleph Inc Garland Tex
Some Applications of Hybrid Thick Film Technology.
Final technical rept. 27 Jan 72-13 Sep 73,

James L. Alford, and Donald G. Jackson. 12 Sep 73, 83p 73-AR-1, AFAL-TR-73-413
Contract F33615-72-C-1728
Distribution limitation now removed.

Hybrid thick film technology from its inception provided a capability that cannot currently be duplicated by any other solid-state active device process. This program explored the utilization of this technology by breadboarding various versions of low-power communications devices. It was established that the technology is capable of producing high yield, reasonable cost equipment of extremely miniature size, high efficiency and low power consumption. The potential applications explored were not all inclusive. The processes used can now be considered reliable, state-of-the-art fabrication techniques. (Author)

PAT-APPL-6-189 237 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Power Circuit Utilizing Self Excited Hall Effect Switch Means.
Patent Application,
Peter J. Turche. Filed 27 Sep 80, 18p AD-D007 864/2
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This application discloses a power circuit utilizing a switch comprised of Hall-effect-active resistive elements for interrupting a current flow in an inductive energy storage system. Interruption of the flow of current causes a high-voltage pulse which drives the current flow into a circuit leg which is parallel to the interrupting elements. The Hall effect switch is controlled by means of an exciter coil that is connected in parallel with the Hall-effect-active resistive elements to provide self excited operation.

PATENT-4 224 576 Not available NTIS
Department of the Navy, Washington, DC.
Gyrotron Travelling-Wave Amplifier.
Patent,
Victor L. Granatstein, Phillip Sprangle, Adam T. Drobot, Kwo R. Chu, and Laurence Safter. Filed 19 Sep 78, patented 23 Sep 80, 9p AD-D007 872/5, PAT-APPL-943 894
Supersedes PAT-APPL-943 894-78, AD-D005 738.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

This report describes an apparatus for amplifying coherent radiation at millimeter and submillimeter wavelengths includes the combination of a travelling-wave-tube cyclotron-maser-amplifier structure and a magnetron-injection electron gun. The amplifier structure includes a fast-wave drift tube and an electromagnetic wave launcher within the bore of a superconducting magnet. The magnetron-injection electron gun is also within the bore of the magnet and is coupled to the drift tube. As a travelling wave is launched in a preferred mode in the drift tube, the electron gun injects an annular beam of relativistic electrons having both large energy transverse to the axis of the device and small energy spread into the drift tube so that the electrons gyrate at their cyclotron frequency in orbits about the lines of the axial magnetic field produced by the magnet. The travelling wave is amplified by extracting energy from the relativistic electron beam. Efficiency of this energy transfer is optimized by tapering the magnetic field near the output end of the wave-beam interaction region.

PATENT-4 227 153 Not available NTIS
Department of the Navy, Washington, DC.
Pulse Generator Utilizing Superconducting Apparatus.
Patent,
Daniel L. Birx. Filed 26 Jul 78, patented 7 Oct 80, 4p AD-D007 875/8, PAT-APPL-928 218
Supersedes PAT-APPL-928 218-78, AD-D005 725.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

High power, phase coherent pulses are generated by superconducting apparatus which includes a superconducting cavity resonator that is pumped by a low power microwave source while being isolated from a load. Switching of the cavity to an emitting mode is accomplished in 5 to 10 nanoseconds by firing a gas discharge tube that acts to couple the activity to the load while decoupling it from pumping source. (Author)

PATENT-4 227 187 Not available NTIS
Department of the Air Force, Washington, DC.
High Speed Real Time Quantizer and Analog/Digital Converter.
Patent,
John V. McNamara, and Paul Van Etten. Filed 30 Mar 79, patented 7 Oct 80, 9p AD-D007 881/6, PAT-APPL-6-025 413
Supersedes PAT-APPL-6-025 413, AD-D006 042.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

A system for performing real time quantization and analog/digital conversion of an analog waveform operating with analog input signals over one gigahertz bandwidth is realized by utilizing a CRT type device in which the electron beam is deflected by the analog input waveform. The deflected electron beam strikes a fast phosphor screen and an externally positioned target consisting of light sensitive elements arranged in a discrete pattern detects and quantizes the signal. The output of the detectors feed an encoder resulting in a binary digital output waveform. The device accepts both unipolar and bipolar video waveform and has parallel output channels such that further circuitry to be employed can operate with reduced bandwidths. (Author)

PATENT-4 227 232 Not available NTIS
Department of the Air Force, Washington, DC.
Clutch Protection Circuit.
Patent,
Jonathan M. Goode. Filed 8 Mar 79, patented 7 Oct 80, 5p AD-D007 880/8, PAT-APPL-6-018 696
Supersedes PAT-APPL-6-018 696.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

A circuit for the protection of devices from power line transients and accidental shut-down requiring operator performance for restart including a push button switch for resetting holding relays to operate the apparatus. (Author)

PATENT-4 228 423 Not available NTIS
Department of the Air Force, Washington, DC.
Offset Correction Apparatus for a Successive Approximation A/D Converter.
Patent,
Christopher B. Schwerdt. Filed 30 Dec 77, patented 14 Oct 80, 7p AD-D007 879/0, PAT-APPL-866 143
Supersedes PAT-APPL-866 143-77, AD-D004 699.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

This patent discloses an offset correction apparatus for a successive approximation analog to digital converter which will correct the A/D converter-derived offset voltage as referred to the analog input to within + or - 1mV of a preset reference over a wide temperature range.

PB81-851289 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Demodulators. January, 1970-October, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 208p
NERACUSGNT1627
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information concerning design and applications of demodulators. Applications to microprocessors, FM color television, digital systems, transmitter measuring, suppressed radio signals, communications, carrier transmitters and other transmitters are also discussed. (Contains 200 citations.)

PB81-851297 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Demodulators. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 177p NERACEI NT1627
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information concerning design and applications of demodulators. Applications to microprocessors, FM color television, digital systems, transmitter measuring, suppressed radio signals, communications, carrier transmitters and other transmitters are also discussed. (Contains 200 citations.)

PB81-851305 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Demodulators. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Oct 80,
Walter Van Put. Oct 80, 147p NERACIAANT1627
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information concerning design and applications of demodulators. Applications to microprocessors, FM color television, digital systems, transmitter measuring, suppressed radio signals, communications, carrier transmitters and other transmitters are also discussed. (Contains 200 citations.)

UCID-18819 PC **A02**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Efficient Design of Two-Dimensional Recursive Digital Filters. Final Report.
R. E. Twogood, and S. K. Mitra. Jan 80, 12p
Contract W-7405-ENG-48

This report outlines the research progress during the period August 1978 to July 1979. This work can be divided into seven basic project areas. Project 1 deals with a comparative study of 2-D recursive and nonrecursive digital filters. The second project addresses a new design technique for 2-D half-plane recursive filters, and Projects 3 thru 5 deal with implementation issues. The sixth project presents our recent study of the applicability of array processors to 2-D digital signal processing. The final project involves our investigation into techniques for incorporating symmetry constraints on 2-D recursive filters in order to yield more efficient implementations. (ERA citation 06:001282)

10. ENERGY CONVERSION (NON-PROPULSIVE)

10A. Conversion Techniques

AD-A092 157/7 PC **A05**/MF **A01**
Department of Transportation, Washington, DC. Library Services Div.
Energy Use in Transportation. Selected References.
Bibliographic list 1973-1979,

Anne B. La Foy. Aug 80, 85p Rept no. DOT-OST-LIB-11

This is a selected, partially annotated listing of periodical articles, reports and books held by the Department of Transportation Library on the subject of energy use in transportation.

CONF-800212- PC **A05**/MF **A01**
Oak Ridge National Lab., TN.
Energy in the '80S: Decade of Decision.
Jun 80, 90p
Contract W-7405-ENG-26
WATTec annual energy conference and exhibition during National Engineers' week, Knoxville, TN, USA, 20 Feb 1980.

This proceeding includes the six papers presented at the Public Awareness Symposium plus the WATTEC/Engineers' Week banquet address on nuclear power by Dr. Harold M. Agnew of General Atomic Co.; these presentations on the final day, February 22, concluded the 1980 WATTEC conference. A separate abstract was prepared for each paper and for the banquet address. (ERA citation 05:033667)

DOE/CS/20160-01(V.5) PC **A10**/MF **A01**
Northrop Services, Inc., Huntsville, AL.
Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
Aug 80, 213p
Contract AC01-77ET20160

This phase of the Site Insolation and Wind Power Characteristics Study was performed to provide statistical information on the expected future availability of solar and wind power at various sites in the Western Region (North Section) of the US Historic data (SOLMET), at 21 National Weather Service stations with hourly solar insolation and collateral meteorological information, were interrogated to provide an estimate of future trends. Solar data are global radiation incident on a horizontal surface, and wind data represent wind power normal to the air flow. Selected insolation and wind power conditions were investigated for their occurrence and persistence, for defined periods of time, on a monthly basis. Global horizontal insolation is related to inclined surfaces at each site. Ratios are provided, monthly, for multiplying global insolation to obtain insolation estimates on south-facing surfaces inclined at different angles with respect to the horizontal. Also, joint probability distribution tables are constructed showing the number of occurrences, out of a finite sample size, of daily average solar and wind power within selected intervals, by month. Information of this nature is intended as an aid to preliminary planning activities for the design and operation of solar and wind energy utilization and conversion systems. (ERA citation 06:000403)

DOE/ET/20560-1 PC **A08**/MF **A01**
Pennsylvania State Univ., University Park. Dept. of Meteorology.
Statistics of Wind Fluctuations over Complex Terrain.
J. A. Dutton, H. A. Panofsky, D. Larko, H. N. Shirer, and G. Stone. Oct 79, 157p
Contract AS06-78ET20560

This report deals with the properties of relative turbulence intensities, turbulent spectra and frequency distributions over uniform and complex terrain. As to intensities of turbulence, the report concentrates on properties of sigma/sub u//u/sub */, sigma/sub v//u/sub */, sigma/sub w//u/sub */, where the sigma's are the standard deviations of the longitudinal, transverse and vertical velocity components, respectively, and u/sub */ is the friction velocity. Given these ratios, relative turbulent intensities (such as sigma/sub u//U, where U is the wind speed) can be obtained with the standard wind profile formulae. Such formulae, though developed for homogeneous terrain, may turn out to be useful over complex terrain, provided u/sub */, is taken to be the friction velocity at the surface. (ERA citation 06:000683)

DOE/NASA/9235-75/3 PC **A02**/MF **A01**
Lockheed-California Co., Burbank.
100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
R. E. Donham, J. Schmidt, and B. S. Linscott. 1975, 14p CONF-7505145-1
31. national forum of the American Helicopter Society, Washington, DC, USA, May 1975, Portions of document are illegible.

The design, fabrication and analysis of aluminum wind turbine rotor blades is discussed. The blades are designed to meet criteria established for a 100-kilowatt wind turbine generator operating between 8 and 60-mile-per-hour speeds at 40 revolutions per minute. The design wind speed is 18 miles per hour. Two rotor blades are used on a new facility which includes a hingeless hub and its shaft, gearbox, generator and tower. Experience shows that, for stopped rotors, safe wind speeds are strongly dependent on blade torsional and bending rigidities which the basic D spar structural blade design provides. The 0.25-inch-thick nose skin is brake/bump formed to provide the basic D spar structure for the tapered, twisted blades. This technique was developed to form the thick spar skins to avoid high tooling costs associated with stretch forming methods. (ERA citation 06:000674)

DOE/TIC-11212 PC **A03**/MF **A01**
Alaska Power Administration, Juneau.
Annual Report, 1979.
Jul 80, 40p

The Alaska Power Administration (APA) operates, maintains, and markets power for Alaska's two Federal hydroelectric projects - the 30,000-kW Eklutna Project near Anchorage and the 47,160-kW Snettisham Project near Juneau. APA also conducts investigations of future water and power projects as well as studies of transmission and power system development, all in cooperation with other Federal, State, and local entities. APA was established in June of 1967 as a unit of the Interior Department and became a unit of the Department of Energy on October 1, 1977. APA reports to the Assistant Secretary of Energy for Resource Applications. This report contains information and statistics on power production, sales, and revenue, rates and repayment, energy conservation, the power situation in Alaska, and the annual audit of the APA. (ERA citation 06:000397)

DOE/TIC-4579(Rev.11) PC **A99**/MF **A01**
Department of Energy, Oak Ridge, TN. Technical Information Center.
Energy Information Data Base: Serial Titles.
Jun 80, 665p

The Department of Energy Technical Information Center (TIC) is responsible for creating bibliographic data bases that are used in the announcement and retrieval of publications dealing with all phases of energy. The TIC interactive information processing system makes use of a number of computerized authorities so that consistency can be maintained and indexes can be produced. One such authority is the Energy Information Data Base: Serial Titles. This authority contains the full and abbreviated journal title, country of publication, CODEN, and certain codes. This revision replaces previous revisions of this document. (ERA citation 05:039229)

DOE/TIC-4585(Rev.2) PC **A99**/MF **A01**
Department of Energy, Oak Ridge, TN. Technical Information Center.
Energy Information Data Base: Corporate Author Entries.
Jun 80, 612p

One of the controls for information entered into the data bases created and maintained by the DOE Technical Information Center is the standardized name for the corporate entity or the corporate author. The purpose of Energy Information Data Base: Corporate Author Entries is to provide a means for the consistent citing of the names of organizations in bibliographic records. These entries serve as guides for users of the DOE/RECON computerized data bases who want to locate information originating in particular organizations. The entries in this revision include the corporate entries used in report bibliographic citations since 1973 and list approximately 28,000 corporate sources. (ERA citation 05:039230)

EUR-6806-FR PC **A03**/MF **A01**
Commission of the European Communities, Luxembourg.
Completion of a Prototype Installation for In-Line Coating by the Pyrosol Process for the Realization of Selective Glazings. Final Report.
G. Blandenet, and Y. Lagarde. 1980, 39p
In French.
U.S. Sales Only.

The Pyrosol process, based on the pyrolysis of an aerosol produced by ultrasonic pulverisation, is particularly efficient in the realization of transparent conductive and infra-red reflective coatings such as indium or tin oxides. For credibility towards industry, and before envisaging a life-size machine, an in-line machine, adapted to unassuming but easily extrapolable sizes (substrate sizes: 300 mm x 300 mm) must be studied and realized. The aim of the research is to carry out a systematic study of parameters relative to the quality of coatings. After realization of an in-line machine for coating glass substrates, optimization of parameters for increasing homogeneity and properties of obtained glazing (electrical and optical properties, emissivity) is carried out. (ERA citation 06:000553)

ORNL/TM-7483 PC **A06**/MF **A01**
Oak Ridge National Lab., TN.
Fossil Energy Program. Progress Report, July 1980.
L. E. McNeese. Oct 80, 120p
Contract W-7405-ENG-26

This report - the seventy-second of a series - is a compendium of monthly progress reports for the ORNL research and development programs that are in support of the increased utilization of coal and other fossil fuel alternatives to oil and gas as sources of clean energy. The projects reported this month include those for coal conversion development, chemical research and development, materials technology, component development and process evaluation, technical support to major liquefaction projects, process and program analysis, fossil energy environmental analysis, coal preparation and waste utilization, coal preparation plant automation, atmospheric fluidized bed coal combustor for cogeneration, technical support to the TVA fluidized bed combustion demonstration plant program, fossil energy applications assessments, performance assurance system support for fossil energy projects, international assessment of atmospheric fluidized bed combustion technology, and PFBC systems analysis. (ERA citation 06:000002)

ORNL-5671 PC **A19**/MF **A01**
Oak Ridge National Lab., TN.
Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
L. E. McNeese. Oct 80, 426p
Contract W-7405-ENG-26

This quarterly report covers the progress made during the period April 1 through June 30 for the Oak Ridge National Laboratory research and development projects that are carried out in support of the increased utilization of coal and other fossil fuels as sources of clean energy. These projects are supported by various parts of DOE including Fossil Energy, Basic Energy Sciences, Office of Health and Environmental Research, Office of Environmental Compliance and Overview, Economic Regulatory Administration, Policy and Evaluation, Resource Applications, by the Electric Power Research Institute, and by the Tennessee Valley Authority and the EPA Office of Research and Development through interagency agreements with the DOE. (ERA citation 06:000001)

ORO-5135-77/7 PC **A06**/MF **A01**
West Virginia Univ., Morgantown. Dept. of Aerospace Engineering.
Effects of Flow Curvature on the Aerodynamics of Darrieus Wind Turbines.
P. G. Migliore, and W. P. Wolfe. Jul 80, 113p
Contract AC05-76ET20372

A theoretical and experimental investigation was conducted which clearly showed the effects of flow curvature to be significant determinants of Darrieus turbine blade aerodynamics; qualitatively, these results apply equally to straight or curved bladed machines. Unusually large boundary layer

radial pressure gradients and virtually altered camber and incidence are the phenomena of primary importance. Conformal mapping techniques were developed which transform the geometric turbine airfoils in curved flow to their virtual equivalents in rectilinear flow, thereby permitting the more accurate selection of airfoil aerodynamic coefficients from published sectional data. It is demonstrated that once the flow idiosyncracies are fully understood, they may be used to advantage to improve the wind energy extraction efficiency of these machines. (ERA citation 06:000676)

PB81-125197 PC **A03**/MF **A01**
Instituut voor Milieuhygiene en Gezondheidstechniek TNO, Delft (Netherlands).
Warmtebesparing door Isolatie en Stookwijze Bereikt in Twee Woningen-Woning II (Heat Savings by Insulation and Usage of the Heating System Achieved in Two Houses),
H. G. Bouwman. Jun 76, 26p C-375
Text in Dutch.

Heat savings were determined for each of the following actions: heating with a lower temperature; closed curtains; shut off radiators; insulation in hollow walls; and double windows. The only information which was used was gas meter reading, temperature measurements, and meteorological data, mainly day degree information from the Bilt (National Meteorological Institute). Total savings exceeded more than 40%.

PB81-128704 PC **A09**/MF **A01**
Ford, Bacon and Davis, Inc., New York.
Energy Emergency Contingency Plan.
Technical rept.
Nov 80, 179p UMTA-NY-09-0054-80-1
Prepared in cooperation with Tri-State Regional Planning Commission, New York.Portions of this document are not fully legible. Color illustrations reproduced in black and white.

This study contains the energy emergency contingency plan for the New Jersey portion of the Tri-State region. The plan details the feasibility of implementing certain contingency measures to relieve or eliminate capacity shortfalls on subsidized bus transportation under the auspices of the New Jersey Transit Corporation. The primary purpose of this study is to evaluate effective short range strategies to expand existing transit services, capable of being implemented within two weeks, should a reduction of fuel supplies curtail travel by automobile. The study area is in the nine northern counties of New Jersey under Tri-State jurisdiction.

PB81-129090 PC **A03**/MF **A01**
Transport and Road Research Lab., Crowthorne (England).
Research on Energy Conservation for Cars and Goods Vehicles,
M. H. L. Waters. c1980, 34p TRRL-SUPPLEMENTARY-591
Also pub. as ISSN-0305-1315.

This paper is a summary of published work carried out by TRRL on energy conservation for cars and goods vehicles. It describes the research techniques, gives some results and indicates the practical use that can be made of the research work. It also examines briefly the prospects for road transport fuel in the future when natural oil is so scarce and expensive that substitute fuel will be needed.

PB81-130767 PC **A04**/MF **A01**
Statens Vaeg- och Trafikinstitut, Linkoeping (Sweden).
Maetning av Braenslefoerbrukning pa Landsvaeg: Effektstudier vid Olika Vaeg- och Trafikmiljoeer (Measurement of Fuel Consumption on Country Roads: Study of Effects of Different Road and Traffic Situations),
Ulf Hammarstroem. 1979, 61p VTI/MEDDELANDE-181
Text in Swedish. Abstract in English. Also pub. as ISSN-0347-6049.

Fuel-consumption in motor-vehicles has been examined in different road and traffic conditions. Field-measurements with a car on rural roads has resulted in connections between fuel-consumption and the following variables: speed, gradient, horizontal curvature, pavement and queue position. For lorries the effect of gradient on fuel consumption was examined by means of a calculation-model. The model was used for calculating fuel consumption for various weight, speed and gradient.

PB81-132268 PC **A07**/MF **A01**
National Bureau of Standards, Washington, DC. National Engineering Lab.
Residential Solar Data Center MIRADS User's Guide.
Final rept.,
Patricia M. Christopher, Michael Vogt, and Douglas Hall. Oct 80, 145p NBSIR-80-2144
Sponsored in part by Department of Housing and Urban Development, Washington, DC. Div. of Energy, Building Technology and Standards.

The Residential Solar Data Center Project staff in the Center for Building Technology, National Bureau of Standards, maintains a computerized data base containing non-instrumented residential data from the DoE/HUD Solar Heating and Cooling Demonstration Program. Data contained in the solar data base are accessible online to users of the NBS Center Computer via remote terminals with a data base retrieval software package called MIRADS (Marshall Information Retrieval And Display System). This document is a self-teaching user's guide to the solar data base. It is complete with the basic MIRADS language rules, examples of use, and a step-by-step walk-through of a typical interactive session. Appendices contain all the data element names and coded values needed to use the solar data with MIRADS, as well as many examples of actual computer sessions.

PB81-135741 PC **A06**/MF **A01**
Swedish Council for Building Research, Stockholm.
Flat Plate Thermal Solar Collectors: A Physical Background,
Per Isakson. 1980, 105p ISBN-91-540-3329-2, D35:1980

The purpose of the report is to provide a physical background to the energy balance of flat plate solar collectors, and to give an idea of the wide range of literature available on the subject.

PB81-850984 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Systems Analysis Applied to Energy Forecasting. January, 1976-August, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Aug 80,
John H. Frey. Sep 80, 152p NERACEDBNT1690
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the application of systems analysis and operations research to the forecasting of energy sources, supplies, facilities, consumption, demand, and shortages. There is some consideration of energy policy futures as well. (Contains 136 citations.)

PB81-851024 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Resource Conservation and Recovery Act (RCRA). January, 1976-September, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Sep 80,
John H. Frey. Sep 80, 105p NERACEDBNT1837
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning The Resource Conservation and Recovery Act (RCRA). Impacts of this Act upon various energy production processes and systems and upon the industries which use or market them are considered as well as the rules and regulations for the recovery of wastes and their utilization in energy production. (Contains 84 citations.)

10B. Power Sources

AD-A091 982/9 Not available NTIS
Naval Research Lab., Washington, DC.
Analysis of Gas Dissociation Solar Thermal Power System,
T. A. Chubb. 21 Dec 73, 8p Rept no. NRL-REPRINT-8078
Availability: Pub. in Solar Energy, v17 n2-D p129-136 1975 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 161/9 PC **A04**/MF **A01**
Royal Aircraft Establishment, Farnborough (England).
Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
Technical rept.,
M. W. Walkden. Nov 79, 73p RAE-TR-79133, DRIC-BR-71903

In order to determine their proton to electron damage ratios, four different types of modern silicon solar cell have been subjected to 1 MeV electrons and protons in the energy range from 2-50 MeV, followed at each irradiation stage by an exposure to photon irradiation. The cells included non-reflecting and violet cells of normal (200-250 micrometer) thickness and a thin (50 micrometer) cell. Cell performance measurements were made on new and irradiated cells at room and at elevated temperatures to obtain the proton damage ratios and to ascertain whether these were temperature dependent. It was found that the proton damage ratio of one type of cell was approximately one half of that of the other three types. It was also found that the proton damage ratio for this type of cell was independent of temperature, which was not the case with the other types. One cause of these differences is attributed to photon induced changes in solar cell performance following electron and proton irradiation for the particular material from which this type of cell is made. (Author)

AD-A092 438/1 PC **A03**/MF **A01**
Naval Research Lab., Washington, DC.
Results of the Solar Cell Experiments aboard the NTS-2 Satellite after 811 Days in Orbit.
Memorandum rept. 1 Oct 78-30 Sep 79,
Delores H. Walker. 13 Nov 80, 45p Rept no. NRL-MR-4372

This report presents the results obtained from the solar cell experiment aboard the NTS-2 satellite after 811 days in orbit. The objective of the solar cell experiment is to evaluate the performance and radiation hardness of state-of-the-art solar cells in the space environment. The experiment is comprised of fifteen separate experimental modules each containing five 2 x 2 cm solar cells connected in series. The solar cell types include advanced state-of-the-art silicon solar cells such as the Comsat CNR cell, the Spectrolab Textured Helios Reflector cell, and the Solarex Vertical Junction cell. Also included for the first time in a flight experiment is the Hughes gallium-arsenide/gallium-aluminum-arsenide cell. There are also on board experiments to evaluate environmental effects on coverslip adhesives. Telemetered data indicate a radiation environment in the 63 degree, 21,190 km circular orbit of NTS-2 only slightly harder than the predicted value for 1 MeV electron fluence equivalent calculated from space radiation models. Based on the NTS-2 data, the spacecraft main solar array of Spectrolab Helios cells will degrade 27 percent in maximum power over the three-year mission. Solar cell temperatures have reached 105 degrees C, providing the opportunity to look for moderate temperature annealing of radiation-induced damage in the gallium arsenide cells. After more than 26 months in orbit, the loss in power ranged from 20.6 percent in the Sprectrolab Textured Hybrid cell with FEP Teflon bonded coverslip to 52.1 percent in the Comsat textured cell without uv filter.

AD-B014 349/5 PC **A04**/MF **A01**
Air Force Avionics Lab., Wright-Patterson AFB, OH.
Variable Capacitance Electrostatic Energy Conversion System.
Technical rept.,
O. P. Breaux. Apr 76, 63p Rept no. AFAL-TR-75-92

Distribution limitation now removed.

Energy conversion is obtained by operation of variable capacitance electrostatic generators, involving contained charge, in paired opposition to one another across the load (or electrical source of power), either directly or indirectly through dielectric material, to provide for conversion of mechanical energy to electrical energy (or electrical energy to mechanical energy). (Author)

AD-B029 195/5 PC **A03**/MF **A01**
Balje (O.E.), Inc., Sherman Oaks, CA.
Design Study for a 100-Watt Turboalternator Power Unit.
Final rept. Sep 77-Feb 78,
O. E. Balje, and R. Spies. Jun 78, 39p NWC-TP-6029, GIDEP-E140-2553
Contract N60530-77-M-400T
Distribution limitation now removed.

The design of a 100-watt turboalternator is investigated. Three turbine types are considered: Terry, Terry with re-entry, and side Terry with simplified buckets. Two compressed gases are considered: helium and nitrogen. Various high speed bearings are considered, with deep groove radial ball bearings, angular contact ball bearings, and three-lobe journal bearings discussed in detail. Two alternator types are considered, flux switch and rotating magnet. Turbine design details for the highest efficiency helium and nitrogen systems are determined, and their gas storage requirements are compared with the desired storage volume. (Author)

ANL/CNSV-TM-42 PC **A03**/MF **A01**
Faucett (Jack) Associates, Inc., Chevy Chase, MD.
Industrial Cogeneration Case Study No. 3: Mead Corporation Paper Mill, Kingsport, Tennessee.
Apr 80, 42p
Contract W-31-109-ENG-38

The design, operation, performance, economics and energy efficiency of the 25,000 kW co-generating power plant at the Mead Co. paper mill in Kingsport, TN are described, and compared with the efficiency of producing only process heat at the plant while importing electric power from a local utility. It was established that on-site co-generation consumed 2/3 of the energy that would have been required for on-site process heat generation plus purchased off-site-generated electric power and that co-generation resulted in more than $2.8 million saved during the period from 1975 through 1978. (ERA citation 06:000979)

COO-3056-56 PC **A05**/MF **A01**
Thermo Electron Corp., Waltham, MA.
DOE/JPL Advanced Thermionic Technology Program. Progress Report No. 42.
1980, 37p
Contract AC02-ET11292

Progress is reported on the following tasks: (I) surface and plasma investigations, (II) low-temperature converter development, (III) enhanced mode converter experiments, (IV) component hardware development, (V) thermionic power module system studies, (VI) thermionic array module development, (VII) high-temperature converter evaluation, (VIII) advanced converter studies, (IX) postoperational diagnostics, (X) cylindrical converter component development, and (XI) correlation of design interfaces. (ERA citation 06:000914)

DOE/ET/15383-15 PC **A03**/MF **A01**
Engelhard Minerals and Chemicals Corp., Edison, NJ. Engelhard Industries Div.
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
R. M. Yarrington, I. R. Feins, H. S. Hwang, and C. P. Mayer. Jan 80, 31p
Contract AC02-78ET15383

Twelve steam reforming catalysts were evaluated using an autothermal reforming screening unit. Duplicate tests were run with two samples to determine test variability. The samples tested contained either base metals, precious metals, or combinations of base and precious metals. The test was capable of distinguishing among samples where gross variations in composition are the main factor; for example, catalysts containing 2% by weight precious metals are more active than catalysts containing 15% by weight nickel. The results show a decrease in hydrocarbon breakthrough as the weight of nickel charged to the constant volume reactor increases. A commercial nickel catalyst, G90C, appears slightly better than some Engelhard prepared samples of equal nickel concentrations due to the higher density of G90C. Visual observation of the used catalysts show that samples containing only precious metals (Pt/Rh) did not coke during the run. The samples containing only base metals (nickel, cobalt) were coked and were magnetic. Samples containing 14.5% nickel by weight with 0.5% precious metals by weight added were not coked, were not magnetic, and had a blue colored core as compared to the black core of the virgin samples. Some speculation about deactivation mechanisms based on these observations are made. (ERA citation 06:000370)

DOE/ET/15383-18 PC **A03**/MF **A01**
Engelhard Minerals and Chemicals Corp., Edison, NJ. Engelhard Industries Div.
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
R. M. Yarrington, I. R. Feins, and H. S. Hwang.
Apr 80, 28p
Contract AC02-78ET15383

Catalysts are being screened to steam reform hydrocarbons in an autothermal reformer (STR). Twenty-one samples have been screened in a 1-in.-diam (ATR) reactor using No. 2 oil as the hydrocarbon feed. A series of platinum-rhodium catalysts were evaluated to study the effect of varying compositions. A sample containing 1.7% Pt/0.3% Rh was most active but the difference among the samples was within the range of test variability. Development of a more realistic test has been started. The effect of O sub 2 /C level on the gas composition leaving the catalytic partial oxidation section has been determined. The amount of unreacted oil increases as O sub 2 /C level decreases. The unreacted oil is more aromatic than the feedstock. The gas composition contains considerably more olefins as the O sub 2 /C level decreases. Post-run catalyst characterization indicates that the catalyst carrier does not deteriorate in the ATR test. A drastic decrease in CO chemisorption is noted on the Pt/Rh samples. This decline in CO chemisorption could either be due to metal sintering or to carbon deposition on the metal. Other analysis are required to determine which is causing the decline in CO chemisorption. Very low coke levels were found on Pt, Rh, and Pt/Rh samples. Addition of Rh to nickel reduces the coke level over that observed for nickel catalysts. (ERA citation 06:000371)

DOE/ET/15383-22 PC **A03**/MF **A01**
Engelhard Minerals and Chemicals Corp., Edison, NJ. Engelhard Industries Div.
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
R. M. Yarrington, I. R. Feins, and H. S. Hwang.
Jul 80, 32p
Contract AC02-78ET15383

Phase II of the contract, which involved catalyst preparation and evaluation, was nearly completed this quarter. Phase III, which calls for the design and construction of a fuel processor, was started. During the quarter, four types of tests were run on the small scale catalyst screening unit. The operating line for coke-free operations was found to be approximately between 0.41 to 0.44 O sub 2 /C level. Screening at lower O sub 2 /C levels led to problems with plugging. In other tests, increased severity for screening steam reforming catalysts was obtained by doubling the space velocity. Another series of tests were run to determine the gas composition from the catalytic partial oxidation (CPO) section and to evaluate two CPO catalysts. In the other series of tests, catalysts were aged for about 20 hours using a propane, steam, and air mixture before testing with No. 2 oil for another five hours. This latter test has been used to study Pt/Rh catalysts made with various supports. Differences were readily determined for Pt/Rh supported on alpha alumina and Pt/Rh supported on stabilized alumina. This test method will find continued use in evaluating metal-support interactions. Several samples must be evaluated by this method before aging runs are made in the larger unit. After leaching alumina from a used Pt/Rh catalyst, the x-ray diffraction pattern showed the presence of a Pt-Rh alloy in the metal residue. Experiments were run to show that the alloy was formed in the reactor during testing and not during catalyst preparation. A larger version of the ATR reactor has been designed and major components are on order. Completion of the construction phase is scheduled for the next quarter. (ERA citation 06:000372)

DOE/ET/15383-3 PC **A02**/MF **A01**
Engelhard Minerals and Chemicals Corp., Edison, NJ. Engelhard Industries Div.
Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
R. M. Yarrington, I. R. Feins, H. S. Hwang, and C. P. Mayer. Jan 79, 23p
Contract AC02-78ET15383

The work done under this contract in the last quarter of 1978 was concerned with Phase I, which involved preliminary catalyst and process evaluation. The processes under study are hydrogen assisted steam reforming (HASR), catalytic partial oxidation (CPO), and autothermal steam reforming (ATR). Existing Engelhard test units were modified to carry out preliminary runs using the first two processes. Technical analysis to support work in this area consisted of heat and material balances constrained by equilibrium considerations. In a third task, the steam reforming of methanol to produce hydrogen was studied over two commercial low-temperature shift catalysts. Aging runs indicated good initial performance on both catalysts, but methanol conversion started to decline after a few hundred hours on stream. (ERA citation 06:000369)

DOE/ET/15602-T1 PC **A05**/MF **A01**
FluiDyne Engineering Corp., Minneapolis, MN.
MHD Air Heater Development Technology. Progress Report, November 26, 1979-March 31, 1980.
May 80, 82p
Contract AC01-80ET15602

Work on the development of the directly-fired high temperature air heater (HTAH) for MHD power plants is reported. Progress is reported on three tasks: (1) materials selection, evaluation, and development, (2) operability, performance, and materials testing, and (3) full-scale design concepts. Under Task 1, efforts were carried out in several areas. Work on the computer data base for material properties was begun. Data were compiled for several HTAH materials. Materials selections for Valve Test 3 and full-scale studies were made. Test conditions were defined for and creep results obtained from Montana College of Mineral Science and Technology concerning candidate matrix and hot liner materials. Liaison efforts with refractory manufacturers were continued, and information was provided to Argonne National Laboratory and Babcock and Wilcox concerning the HRSR design. Analyses of materials samples from previous matrix and valve tests were completed. Finally, a thermal stress cycling experiment to be carried out at Montana Tech was designed. Under Task 2, efforts were directed toward running Valve Test 3. Problems were encountered with the VTF hot gas supply duct which necessitated two intermediate shutdowns without reaching the final test goal of 300 hours. Modifications necessary to complete the test were begun. Under Task 3, an example HTAH system was defined which will be used as a focal point for screening and definition of control systems and determination of operating methods. The system was defined using the size/cost and other HTAH computer codes. A layout of the system was made, and steady state performance was calculated with the SCAMP code. (ERA citation 06:000903)

DOE/ET/15613-T1 PC **A08**/MF **A01**
Babcock and Wilcox Co., Alliance, OH. Alliance Research Center.
Study of Seed Reporcessing Systems for Open Cycle Coal Fired MHD Power Plants.
Jul 80, 153p

Contract AC02-79ET15613

If open-cycle coal-fired MHD power generation is to be commercially competitive, a large fraction of the potassium seed must be recycled. Cost of processing the seed for recycle must not be excessive and must be less than the cost of make up seed. A preliminary evaluation of the following processes was performed: PERC; formate; aqueous carbonate; modified tampella; scrubber, with and without removal of ash from spent seed; Tomlinson - Tampella; and electrodialysis and electrodialysis - deionization. Criteria considered in the evaluation included cost, state of development, seed loss, power requirements, availability, durability, key component risk, environmental impact, safety, controllability, and impurities buildup. None of the processes is fully proven for this type recycle operation. All require some degree of development. Results are presented in detail, and recommendations are included. (ERA citation 06:000904)

DOE/ET/20279-105 PC **A02**/MF **A01**
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
Photovoltaic Power System at Natural Bridges National Monument.
F. J. Solman. 1980, 2p CONF-801203-1
Contract AC02-76ET20279
National conference on renewable energy technologies, Honolulu, HI, USA, 7 Dec 1980.

The 100-kWp photovoltaic (PV) power system implemented by MIT Lincoln Laboratory under US Department of Energy sponsorship serves a small self-sufficient community, isolated from the utility grid, at the Natural Bridges National Monument (NBNM) in southeastern Utah. This power system is providing information important to the successful operation of future systems: namely, data leading to improved models for system sizing and design as well as reliability, maintenance and performance data on critical PV system components. The park is visited by over 80,000 people per year and thus offers an excellent opportunity to educate the public on renewable energy sources and energy usage. The PV system is briefly described. (ERA citation 06:000476)

DOE/ET/20280-3 PC **A14**/MF **A01**
Science Applications, Inc., La Jolla, CA.
Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
R. M. Traci, G. T. Phillips, and P. C. Patnaik. Sep 78, 306p
Contract AC06-77ET20280

Progress on the development of a New Wind Energy Site Selection Methodology achieved during the final development phase of the program is described. The siting approach provides a useful preliminary to, and partial substitute for, conventional siting studies involving large field test programs by employing mathematical models of meso- and micrometeorology in regions of complex terrain. The models make use of data from meteorological stations where weather records are available and predict the windfield climatology of sites, within the region of interest, where data are unavailable. These forecasts are subsequently analyzed to predict site wind characteristics and to aid in the design of detailed field program to quantify the wind characteristics at promising wind energy sites. (ERA citation 06:000682)

DOE/ET/23009-T10 PC **A04**/MF **A01**
Southern Methodist Univ., Dallas, TX.
Thin Film Cadmium Telluride Solar Cells. Final Technical Report for Period July 1, 1979-August 31, 1980.
T. L. Chu. Aug 80, 52p
Contract AC04-79ET23009

The objectives of this contract are to investigate thin films of cadmium telluride on low cost substrates and to determine the feasibility of using these films for high efficiency solar cells. Efforts during this program have been directed to the construction of apparatus for the chemical vapor deposition of cadmium telluride films, the selection and preparation of substrates, the deposition and characterization of cadmium telluride films, and the fabrication and characterization of solar cells. Cadmium telluride films have been deposited on a number of substrates by the direct combination of cadmium and tellurium on the substrate surface at 500 exp 0 C or higher at rates of up to 0.6 mu m/min. The structural, crystallographic, and electrical properties of cadmium telluride films deposited over a wide range of conditions have been evaluated. A series of doping experiments have been carried out using iodine and indium as the n-type dopant, and phosphorus, arsenic, and antimony as the p-type dopant. Low resistivity films have not been produced thus far. In/W/graphite substrates have been used for the deposition of n-type films with an ohmic interface. However, no suitable substrates have been found to form an ohmic interface with p-type films. Solar cells prepared from these films exhibit relatively good short-circuit current density, up to 15 mA/cm exp 2 , but their conversion efficiencies are severely limited by the high series resistance of the devices. (ERA citation 06:000411)

DOE/ET/23009-T11 PC **A04**/MF **A01**
Southern Methodist Univ., Dallas, TX.
Thin Film Cadmium Telluride Solar Cells. Final Technical Report, July 1, 1979-August 31, 1980.
T. L. Chu. Aug 80, 54p
Contract AC04-79ET23009

Efforts during this program have been directed to the construction of apparatus for the chemical vapor deposition of cadmium telluride films, the selection and preparation of substrates, the deposition and characterization of cadmium telluride films, and the fabrication and characterization of solar cells. Cadmium telluride films have been deposited on a number of substrates by the direct combination of cadmium and tellurium on the substrate surface at 500 exp 0 C or higher at rates of up to 0.6 mu m/min. The structural, crystallographic, and electrical properties of cadmium telluride films deposited over a wide range of conditions have been evaluated. A series of doping experiments have been carried out using iodine and indium as the n-type dopant, and phosphorus, arsenic, and antimony as the p-type dopant. Low resistivity films have not been produced thus far. In/W/graphite substrates have been used for the deposition of n-type films with an ohmic interface. However, no suitable substrates have been found to form an ohmic interface with p-type films. Solar cells prepared from these films exhibit relatively good short-circuit current density, up to 15 mA/cm exp 2 , but their conversion efficiencies are severely limited by the high series resistance of the devices. It is believed that low resistivity cadmium telluride films can be prepared by optimizing the deposition conditions. In parallel with the search of substrates with low interface resistance, back wall cells, such as p-CdTe/n-CdS/ITO/glass(substrate), should be investigated. (ERA citation 06:000412)

DOE/ET/23108-5 PC **A02**/MF **A01**
RCA Labs., Princeton, NJ.
Photovoltaic Mechanisms in Polycrystalline Thin-Film Silicon Solar Cells. Quarterly Report No. 4, May 1-July 31, 1980.
D. Redfield. Aug 80, 20p
Contract AC01-79ET23108

While seeking to optimize the dopant concentrations and profiles of diffused Si solar cells, it has been found that 1000 exp 0 C is a poor diffusion temperature and 875 exp 0 C is much better. Attempts to passivate the front surface of n exp + /p cells by 100 A of grown SiO sub 2 indicate that this oxide is inadequate to reduce the surface recombination velocity. Exposure to atomic hydrogen worsened the blue response of such a cell. Indications exist that good blue performance may still be obtainable with somewhat deeper junctions (approx. 0.5 mu m) than normally used. On grain boundaries (GB) in Si, the activating effect of heat treatment on the harmful effects of GB has been verified. A slightly modified version of the liquid-crystal technique for observation of the active (i.e., harmful) GB correlates well with the light-spot scan technique. (ERA citation 06:000413)

DOE/EV-0103 PC **A03**/MF **A01**
Los Alamos Scientific Lab., NM.
Technology Assessment of Wind Energy Conversion Systems.
B. W. Meier, and T. J. Merson. Sep 80, 48p
Contract W-7405-ENG-36

Environmental data for wind energy conversion systems (WECSs) have been generated in support of the Technology Assessment of Solar Energy (TASE) program. Two candidates have been chosen to characterize the WECS that might be deployed if this technology makes a significant contribution to the national energy requirements. One WECS is a large machine of 1.5-MW-rated capacity that can be used by utilities. The other WECS is a small machine that is characteristic of units that might be used to meet residential or small business energy requirements. Energy storage systems are discussed for each machine to address the intermittent nature of wind power. Many types of WECSs are being studied and a brief review of the technology is included to give background for choosing horizontal axis designs for this study. Cost estimates have been made for both large and small systems as required for input to the Strategic Environmental Assessment Simulation (SEAS) computer program. Material requirements, based on current generation WECSs, are discussed and a general discussion of environmental impacts associated with WECS deployment is presented. (ERA citation 06:000673)

DOE/JPL/955382-79/6 PC **A02**/MF **A01**
Massachusetts Inst. of Tech., Cambridge. Dept. of Chemistry.
Low-Cost Solar Array Project. Task I. Silicon Material. Investigation of the Hydrogenation of SiCl sub 4.
J. Y. P. Mui, and D. Seyferth. 7 Oct 80, 18p
Contract NAS-7-100-955382

Reaction kinetic measurements on the hydrochlorination of SiCl sub 4 and m.g. silicon metal were last reported as a function of reaction temperature, reactor pressure, H sub 2 /SiCl sub 4 ratio and silicon metal particle size distribution, 3 SiCl sub 4 + 2 H sub 2 + Si reversible 4 SiHCl sub 3 . The effect of impurities in the m.g. silicon metal on the rate of this reaction has been investigated in this quarter. The m.g. silicon was replaced with high purity, electronic grade silicon metal in the hydrochlorination reaction. With electronic grade Si, the reaction rate was found to be about one order of magnitude slower than those obtained with m.g. silicon metal. These metallic impurities in the m.g. silicon appear to have a catalytic effect. Addition of 5 wt% cuprous chloride to the electronic grade Si mass bed increased the reaction rate to the same level as those obtained with m.g. silicon with 5% CuCl added. The effect of prolonged reaction time on the hydrochlorination reaction was studied. The plan is to run the reaction for long periods of time with the objective of studying the life of the Si mass bed. No significant change in the reaction rate was observed after about 80 hours of reaction. (ERA citation 06:000447)

DOE/JPL/955696-80/2 PC **A02**/MF **A01**
Lockheed Missiles and Space Co., Inc., Sunnyvale, CA.
Laser Annealing of Ion Implanted CZ Silicon for Solar Cell Junction Formation. Quarterly Report No. 2.
J. S. Katzeff. Oct 80, 24p
Contract NAS-7-100-955696

Results on a contract to evaluate the merits of large spot size pulsed laser annealing of ion implanted silicon wafers for junction formation in solar cells are reported. Investigations on homogenization of the laser beam were continued. In addition to the 30 mm diameter fused silica rod with a 90 exp 0 bend configuration, quartz tubes were obtained and briefly tried. Best results were obtained with the rod homogenizer. Laser annealing experimentation resulted in complete recrystallization of ion implanted silicon substrates as confirmed by TEM and RBS analysis. Single pulse laser annealed, functional cells (2 x 2cm) were fabricated using varying process conditions, yielding conversion efficiencies predominantly in the 13% to slightly less than 15%. (ERA citation 06:000417)

DOE/NASA/0134-1 PC **A08**/MF **A01**
Power Technologies, Inc., Schenectady, NY.
MOD-2 Wind Turbine Farm Stability Study.
E. N. Hinrichsen, and P. J. Nolan. Jun 80, 171p
NASA-CR-165156
Contract AI01-79ET20305

The development of large wind turbine generators (WTGs) for operation in utility power systems is accelerating. This report contains the results of an investigation of the dynamics of single and multiple 2.5 MW, Boeing MOD-2 WTGs connected to utility power systems, including the first three-machine cluster connected to the grid of the Bonneville Power Administration. The analysis is based on digital simulation of the complete electromechanical system of single and multiple WTGs, including wind turbine, wind turbine control, drive train, generator, generator excitation control, electrical network and equivalent utility source. Both time response and frequency response methods were used. The results show that the dynamics of WTGs are characterized by two torsional modes, the lightly damped shaft mode at frequencies well below 1 Hz, and the electrical mode at 3-5 Hz. The former is primarily excited by wind speed disturbances, the latter by electrical disturbances. Since the shaft mode falls within the bandwidth of blade pitch control, additional damping for this mode is a prerequisite for good turbine control. (ERA citation 06:000680)

EPRI-AP-1463 PC **A12**/MF **A01**
Westinghouse Electric Corp., Pittsburgh, PA.
Operational Analysis of Open-Cycle MHD. Final Report.
T. E. Lippert, and D. A. McCutchan. Jul 80, 268p

Open cycle magnetohydrodynamic (OCMHD) conceptual power plant designs are studied in the context of a utility system to form a better basis for understanding their design, design requirements and market possibilities. Based on assumed or projected plant costs and performance characteristics, assumed economics and escalation factors, and one coal supply and delivery scenario, overall and regional OCMHD utility market possibilities are reviewed. Additionally, for one hypothetical utility system a generation expansion plan is developed that includes OCMHD as a baseload power generating station. The impact on generation system economics and operation of alternating selected MHD plant cost and performance characteristics are reviewed. Baseload plant availability is shown as an important plant design consideration, and a general methodology and data base is developed to assess the impact on design and cost of various reliability decisions. In this study, an overall plant availability goal is set and the required availabilities of various MHD high technology components are derived to meet the plant goal. The approach is then extended to projecting channel life goals for various plant design configurations and assumptions. The results reported are preliminary and must be viewed in the context of the assumptions and uncertainties inherent in predicting future economic conditions or extrapolating technology. (ERA citation 06:000887)

FE-2895-8 PC **A04**/MF **A01**
Arnold Engineering Development Center, Arnold AFS, TN.
MHD High Performance Demonstration Experiment. Quarterly Progress Report, January 1-March 31, 1980.
May 80, 53p
Contract AI01-78ET11417

The objective of this experimental research, started late in 1973, is to demonstrate the attainment of MHD performance on a sufficiently large scale to verify that the projected efficiency of the commercial MHD concept is attainable. To perform the experiment, an existing facility at the Arnold Engineering Development Center (AEDC) was refurbished and the new systems required for performing the experiment have been designed and built. The entire HPDE system is now complete and shakedown testing of the magnet and flow train have been completed. During the period between January 1, 1980 and March 31, 1980, operation of the HPDE system in the Faraday power producing mode has continued. A peak power of approximately 23.5 MW was produced with a magnetic field of 3.48 T. Tests at magnetic fields up to 3.92 T were also conducted; however, operational problems prevented the development of additional power. Significant results obtained include a more definitive description of transverse voltage characteristics, including the voltage drop near the electrode walls, and further definition of high Hall voltage transients during low to moderate conductivity conditions. Several operational problems were encountered including Hall potential shorting at the aft end of the diffuser and at the patch panels. Arcing at the patch panel during Run 006-016 initiated events which eventually precipitated substantial damage to the channel. The hardware required to effect appropriate repair and make refinements is being purchased and integrated into the system. (ERA citation 06:000897)

SERI/PR-635-770 PC **A10**/MF **A01**
Solar Energy Research Inst., Golden, CO.
Wind Energy Systems. Quarterly Review, April 1, 1980-June 30, 1980.
Nov 80, 215p
Contract AC02-77CH00178

The quarterly review for the wind energy systems (WES) program is prepared by the Solar Research Institute (SERI) as an overview of the program efforts. The review presents the objectives, accomplishments, planned activities, and outputs of each task in the WES program. (ERA citation 06:000671)

SERI/TR-332-416(V.1) PC **A04**/MF **A01**
Solar Energy Research Inst., Golden, CO.
Review of Thermally Regenerative Electrochemical Systems. Volume I. Synopsis and Executive Summary.
H. L. Chum, and R. A. Osteryoung. Aug 80, 65p
Contract AC02-77CH00178

Thermally regenerative electrochemical systems (TRES) are closed systems that convert heat into electricity in an electrochemical heat engine that is Carnot cycle limited in efficiency. Past and present work on such systems is reviewed. Two broad classes of TRES are based on the types of energy inputs required for regeneration: thermal alone and coupled thermal and electrolytic. The thermal regeneration alone encompasses electrochemical systems (galvanic or fuel cells) in which one or more products are formed. The regeneration can be performed in single or multiple steps. The compounds include metal hydrides, halides, oxides, chalcogenides, and alloys or bimetallic systems. The coupled thermal and electrolytic regeneration encompasses electrochemical systems (galvanic or fuel cells) regenerated by electrolysis at a different temperature or different pressure. Examples include metal halides and water. Thermogalvanic or nonisothermal cells are included in this category. Also included are electrochemical engines in which the working electroactive fluid is isothermally expanded through an electrolyte. TRES cover temperature ranges from about 20 exp 0 C to 1000 exp 0 C. Engines with power outputs of 0.1 mW/cm exp 2 to 1 W/cm exp 2 have been demonstrated. Recommendations are made of areas of research in science and engineering that would have long-range benefit to a TRES program. (ERA citation 06:000921)

SERI/TR-351-461 PC **A08**/MF **A01**
Solar Energy Research Inst., Golden, CO.
Comparative Ranking of 0.1-10 MW/sub e/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
J. P. Thornton, K. C. Brown, J. G. Finegold, J. B. Gresham, and F. A. Herlevich. Jul 80, 174p
Contract AC02-77CH00178

This report is part of a two-volume set summarizing the results of a comparative ranking of generic solar thermal concepts designed specifically for electric power generation. The original objective of the study was to project the mid-1990 cost and performance of selected generic solar thermal electric power systems for utility applications and to rank these systems by criteria that reflect their future commercial acceptance. This study considered plants with rated capacities of 1-10 MW/sub e/, operating over a range of capacity factors from the no-storage case to 0.7 and above. Later, the study was extended to include systems with capacities from 0.1 to 1 MW/sub e/, a range that is attractive to industrial and other nonutility applications. Volume I summarizes the results for the full range of capacities from 0.1 to 1.0 MW/sub e/. Volume II presents data on the performance and cost and ranking methodology. (ERA citation 06:000486)

10C. Energy Storage

AD-B004 957/7 PC **A07**/MF **A01**
Spectrolab, Inc., Sylmar, CA.
Advanced Aluminum-Chlorine Battery for Expendable ECM Devices.
Final technical rept. 15 Sep 72-15 Feb 75,
P. F. Ritterman. Feb 75, 147p AFAPL-TR-75-18
Contract F33615-73-C-2018
Distribution limitation now removed.

The objective of this program was to provide advanced battery technology leading to the development of an improved primary power source, utilizing the activated aluminum anode, for expendable ECM jammers. This battery system, when fully developed, was expected to yield energy densities of 60 Wh/lb and 6 Wh/cu in. at the 45 minute discharge rate. (Author)

AD-B007 515/0 PC **A06**/MF **A01**
Eagle-Picher Industries, Inc., Joplin, MO. Electronics Div.
High Rate, Rechargeable, Silver-Zinc Pile Type Battery.
Final rept. May 74-May 75,
L. R. Erisman. May 75, 105p AFAPL-TR-75-51
Contract F33615-74-C-2045
Distribution limitation now removed.

This report describes the work accomplished in the development of a high rate, rechargeable, silver-zinc, pile type battery for the contract period of 1 May 1974 through 1 May 1975. This program is an extension of a preceding study contract, USAF F33615-73-C-2074, and consisted of utilizing component development data to establish processing, fabrication and performance capabilities for a multi-cell pile configuration. A modular system concept using basic 100 kw modules was retained to project accumulated pile test data into systems of the multi-megawatt power range. These studies demonstrated components could be processed and fabricated into submodules capable of assembly into a four megawatt, thirty second system of 3800 pounds and less than 20 cubic feet could be realized. (Author)

DOE/ET/26106-T1 PC **A02**/MF **A01**
Wisconsin Univ. Milwaukee. Coll. of Engineering and Applied Science.
Synthesis of Research and Development in Mechanical Energy Storage Technologies. Progress Report, September 1, 1979-May 31, 1980.
G. M. Karadi. 31 May 80, 12p
Contract FG02-79ET26106

The proposed continuation project is restricted to underground energy storage and includes: underground pumped hydro storage (UPH); second generation compressed air energy storage (CAES); and seasonal aquifer thermal energy storage (SATES). In the economic assessment component of the proposed study superconducting magnetic energy storage (SMES) will also be included for the purposes of economic comparison only. Within the scope of the proposed effort the following specific objectives have been identified: continuation of extensive analysis of technical and economic information in the form of published and unpublished papers, reports and personal communication, synthesis and critical evaluation of the above information; continuation of the comprehensive analysis of Underground Energy Storage Project activities (updating results obtained in the first year of the project); updating and development of information to provide timely input on the progress to TMS staff for planning purposes; identification of major technical, economic and institutional issues having adverse effect on commercialization and advancement of strategy for resolution; and updating of economic analyses of various storage technologies by the modified method developed during the first years. Progress in each of these efforts is discussed. (ERA citation 06:000804)

11. MATERIALS

11A. Adhesives and Seals

PB81-129835 PC **A06**/MF **A01**
California State Dept. of Transportation, Sacramento. Office of Transportation Lab.
Formulation and Evaluation of New Adhesives for Highway Use.
Final rept. 1977-80,
D. R. Chatto, and T. L. Shelly. Jun 80, 108p TL-635150, FHWA/CA/TL-80/20
Contract DOT-D-5-15

New epoxy systems have been developed and older epoxy specifications revised to meet today's changing technology along with environmental and health standards. These changes have been implemented with new and updated state specifications. The subjects covered include Structural Adhesive Development related to Rapid Set Epoxy Mortar, Loop Detector Sealants, and Urethane Adhesives; Formula Component Replacements such as asbestos and Butyl Glycidyl Ether; Consistency of Physical Properties; Pavement Marker Adhesive Development; Accelerated Epoxy Aging Tests; and Commercially Available Adhesives.

PB81-130387 PC **A02**/MF **A01**
National Timber Research Inst., Pretoria (South Africa).
Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
Special rept.,
F. C. Grobler. Jul 79, 12p CSIR/SR/HOUT-175, ISBN-0-7988-1613-9

In order to find a suitable substitute for imported coconut shell flour as a filler and extender for wood adhesives, macadamia nut shell flour and wattle bark flour were tested and compared with a commercial wood adhesive. The results indicate that macadamia nut shell flour can successfully replace coconut shell flour.

PB81-855322 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Polyethylene Adhesives. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Walter Van Put. Jun 80, 51p NERACEI NT0427
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover information on the development and formulations of polyethylene adhesives. Treatment and preparation of substrates, adhesion mechanics, and radiation induced grafting for adhesive bonding, are also included. (Contains 044 citations.)

11B. Ceramics, Refractories, and Glasses

AD-A092 251/8 PC **A03**/MF **A01**
Massachusetts Inst. of Tech., Cambridge. Dept. of Materials Science and Engineering.
An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
Final rept. 1 May 79-15 Jul 80,
N. J. Grant, J. B. Vander, Sande C. Ashdown, and L. Collins. 27 Oct 80, 30p ARO-16219.1-MS
Contract DAAG29-79-C-0077

This research had two aims: (a) development and characterization of high Tg (or Tx) glassy alloys, and, (b) identification and development of glassy Fe, Ni and Co base alloys which are capable of undergoing crystallization to a ductile, superfine grain size (less than about 0.1 micrometer), hot workable alloy product. In the first instance the Ni60Nb40 and Ni85Nb15 composition ranges were studied for glass formation, crystallization and properties. Alloying studies were undertaken to increase Tg(Tx) and to strengthen and stabilize the glassy state. In the second instance, compositions and glass forming tendencies were studied whereby the lowest possible metalloid content could be achieved while still producing a glass. For example, the classical Fe80B20 composition can be kept in the glassy state during melt spinning for compositions as low as 12-14 at. pct. boron. (Author)

AD-A092 253/4 PC **A03**/MF **A01**
Rockwell International, Thousand Oaks, CA. Science Center.
Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
Technical rept.,
F. F. Lange. Oct 80, 29p Rept no. SC5117.8TR
Contract N00014-77-C-0441

The thermodynamics of the constrained phase transformation is presented with particular reference to size effects introduced by surface phenomena concurrent with the transformation, e.g., the formation of solid-solid surfaces (twins, etc.) and solid-vapor surfaces (e.g., microcracks). It is shown that these surface phenomena not only introduce a size-dependent energy term into the total free energy change, but also reduce the strain energy associated with the transformation, which can result in a transformation at a temperature where the chemical free energy change is less than the unrelieved strain energy associated with the constrained transformation. The results of this analysis lead to a phase diagram representation that includes the size of the transforming inclusion. This diagram can be used to define the critical inclusion size required to prevent the transformation and/or to obtain the transformation, but avoid one or more of the concurrent surface phenomena. (Author)

AD-A092 492/8 Not available NTIS
Rensselaer Polytechnic Inst., Troy, NY. Dept. of Materials Engineering.
Modification of the Hillig-Charles Theory for Static Fatigue of Glass,
R. H. Doremus. 30 Jul 79, 9p ARO-14889.3-MS
Grant DAAG29-78-G-0141
Availability: Pub. in Engineering Fracture Mechanics, v13 p945-953 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 493/6 Not available NTIS
Rensselaer Polytechnic Inst., Troy, NY. Dept. of Materials Engineering.
Importance of Crack Tip Radii in Fracture and Fatigue of Glass,
Robert H. Doremus. 1980, 5p ARO-14889.4-MS
Grant DAAG29-78-G-0141
Availability: Pub. in Jnl of Non-Crystalline Solids, V38 & 39 p493-496 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 496/9 Not available NTIS
North Carolina State Univ. at Raleigh. Engineering Research Services Div.
High-temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus,
C. H. Carter, Jr., C. A. Stone, R. F. Davis, and D. R. Schaub. 13 Mar 80, 7p ARO-12487.6-MS
Grant DAAG29-75-G-0113
Availability: Pub. in Review of Scientific Instruments, v51 n10 p1352-1357 Oct 80 (No copies furnished by DTIC/NTIS).

No abstract available.

CONF-800641-7 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Observation of Dislocations and Twins in Explosively Compacted Alumina.
C. S. Yust, and L. A. Harris. 1980, 14p
Contract W-7405-ENG-26
International conference on the metallurgical effects of high strain rate deformation and fabrication, Albuquerque, NM, USA, 22 Jun 1980.

The microstructure at the half-radius position of a polycrystalline alumina rod formed by explosive compaction has been studied by transmission electron microscopy. The as-compacted lattice is composed of differently misoriented bands aligned predominantly in one direction. Such bands may correspond to frequently observed shock lamellae. The band edges are defined by dislocation arrays lying on the basal planes of the hexagonal alumina lattice. The dislocations have Burgers vectors of the type (1120) and (1010), which are the Burgers vectors of slip dislocations in the basal plane. Basal plane twinning is also observed, and the twin boundaries are found to contain interfacial dislocations. While dislocation generation occurs primarily on basal planes, some dislocation activity is also noted on prism, (1100), and on rhombohedral, (1101), planes. Nonbasal twinning, however, has not been detected. The lattice damage is discussed in terms of possible dislocation and twinning mechanisms. (ERA citation 06:001097)

EPRI-AP-1499 PC **A06**/MF **A01**
General Atomic Co., San Diego, CA.
Ceramic Materials for Fusion Reactors. Interim Report.
G. Hopkins, G. C. Trantina, and J. Corelli. Sep 80, 115p

This report documents the initial results of a study on the use of low-activity ceramics as materials for fusion reactor first-wall and blanket structures. The current status of structural ceramics was reviewed and silicon carbide was selected as the preferred material, which combines high-mechanical strength at elevated temperatures with excellent radiation-damage resistance in fast-neutron spectra and a very low residual radioactivity. Design studies indicate that a structure consisting of separate modules and containing a pressurized gaseous coolant is the most promising concept. Preliminary stress analyses show that such a design potentially has the survival probability needed for fusion reactor service. However, significant advances in the state-of-the-art of ceramic technology are needed to realize this potential. A long-term program plan, emphasizing testing of components in future fusion reactor test facilities, was therefore prepared. (ERA citation 06:001106)

GA-A-15929 PC **A07**/MF **A01**
General Atomic Co., San Diego, CA.
Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
J. E. Sheehan, and J. F. Holzgraf. Aug 80, 126p
Contract AT03-76ET35300

The design of core support pads and cover blocks for the high-temperature gas-cooled reactor (HTGR) requires a detailed knowledge of the structural integrity of commercial ceramics. This report gives the baseline strengths and fractography of candidate Al sub 2 O sub 3 , Si sub 3 N sub 4 , and fused SiO sub 2 materials. Diametral-compressive and four-point bend strengths were determined between 20 exp 0 to 1200 exp 0 C in dry helium. Chemistry, microstructure, and fracture surfaces were correlated with the mechanical behavior. (ERA citation 05:038129)

PB81-119851 Not available NTIS
National Bureau of Standards, Washington, DC.
Thermal Effects in Sharp-Particle Contact.
Final rept.,
B. R. Lawn, B. J. Hockey, and S. M. Wiederhorn. 1980, 3p
Pub. in Jnl. of the American Ceramic Society, Discussion and Notes 63, n5-6 p356-358 May-Jun 80.

At sufficiently high loading rates, the penetration of solid surfaces with sharp indenters or particles often results in melting at the contact site. This phenomenon can be explained in terms of localized energy dissipation during elastic-plastic contacts. In this paper, a model describing the adiaba-

tic temperature rise is developed in terms of indentation theory, with specific reference to contact data for soda-lime-silicate glass.

PB81-121493 Not available NTIS
National Bureau of Standards, Washington, DC.
Effect of Particle Impact Angle on Strength Degradation of Glass.
Final rept.,
S. M. Wiederhorn, B. R. Lawn, and B. J. Hockey. Dec 79, 2p
Sponsored in part by Office of Naval Research, Washington, DC.
Pub. in Jnl. of The American Ceramic Society 62, n11-12 p639-640 Nov-Dec 79.

No Abstract Required (Short Note).

PB81-121527 Not available NTIS
National Bureau of Standards, Washington, DC.
Strength Degradation of Glass Impacted with Sharp Particles: I, Annealed Surfaces.
Final rept.,
S. M. Wiederhorn, and B. R. Lawn. 1979, 5p
Sponsored in part by Office of Naval Research, Washington, DC.
Pub. in Jnl. of The American Ceramic Society 62, n1-2 p66-70 1979.

The strength characteristics of annealed brittle surfaces impacted with sharp particles were studied. A theory of the degradation process is constructed in three steps: (1) A sharp particle delivers an impulsive load to the target surface via a plastic contact; (2) the contact loading initiates and propagates median cracks in the surface; (3) the cracks thus induced reduce the strength of the material. Static indentation tests provide essential contact parameters for the degradation equations, thereby allowing for prediction of strengths under in-service conditions. Strength tests on soda-lime glass laths impacted with SiC grit confirm basic predictions of the theory. Higher toughness and lower hardness are the main material requirements for improved resistance to degradation. Initial flaw population in the target surface and projectile geometry are not important factors in the damage process. The study shows that impact energy is the important service variable in determining the extent of strength loss.

PB81-121543 Not available NTIS
National Bureau of Standards, Washington, DC.
Plastic Deformation of Fine-Grained Alumina (Al2O3): II, Basal Slip and Nonaccommodated Grain-Boundary Sliding,
A. H. Heuer, N. J. Tighe, and R. M. Cannon. Feb 80, 6p
Sponsored in part by National Aeronautics and Space Administration, Washington, DC. and Naval Air Systems Command, Washington, DC.
Pub. in Jnl. of The American Ceramic Society 63, n1-2 p53-58 Jan-Feb 80.

Plastic deformation in fine-grained alumina polycrystals (grain sizes 1-15 microns) has been studied; several deformation mechanisms occur simultaneously. This paper is concerned with basal slip and unaccommodated grain boundary sliding (GBS). The basal slip can give rise to a deformation texture. Cavitation occurs due to the occurrence of both unaccommodated GBS and basal slip, because of the marked plastic anisotropy of alumina.

11C. Coating, Colorants, and Finishes

AD-A092 245/0 PC **A04**/MF **A01**
Pratt and Whitney Aircraft Group, West Palm Beach, FL. Government Products Div.
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
Final rept. Sep 77-Jun 79,
Larry S. Sokol, and Charles C. McComas. Jul 80, 57p PWA-FR-11897, AMMRC-TR-80-39
Contract DAAG46-77-C-0057

The objectives of this program were to design, construct, and qualify a new, large reactor suitable for coating titanium alloy compressor components with titanium carbonitride (Ti-Cote C) on a production basis. Materials Technology Corporation (MTC), the sole source of Ti-Cote C, was responsible for the reactor scale-up and subsequent development effort. Microprobe and metallographic studies, erosion testing, the establishment of an S/N curve with coated airfoils, and a determination of the thermal shock resistance of coated airfoils were performed on parts coated in the new reactor. At the conclusion of the program, the scaled up reactor was still unable to deliver the consistent coating quality required for production. Coating coverage, adhesion, and thermal shock resistance were acceptable, but the erosion resistance varied greatly between reactor runs of identical parameters. The problem with the erosion resistance appeared to be related to the somewhat porous and granular microstructure of Ti-Cote C deposited in the new, hot wall reactor. No compositional variations were detected in the coating to explain the grainy structure and inconsistent erosion resistance. MTC performed a parametric study to improve coating reproducibility but it was not entirely successful. (Author)

AD-A092 307/8 PC **A05**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
Master's thesis,
Michael Thomas Keville, and Robert William Lautrup. Jun 80, 93p

Unipolar arcing was studied using a new method of laser plasma production. The mechanism of unipolar arcing has been shown in the literature to be the most important source of wall erosion and plasma pollution. Arcing is of particular concern in Tokamak and other magnetically confined fusion devices. The experiment was conducted using a neodymium-glass laser in both normal pulse and Q-switched modes to generate a hot plasma. This plasma, generated from several different targets, was used to initiate arcing on the surface. From the experimental results, a model of the arcing process was proposed which extended those available in the literature. Further analysis using TiC film deposited by the Activated Reactive Evaporation technique indicated that such films showed promise in preventing or greatly minimizing unipolar arcing damage. (Author)

AD-A092 382/1 PC **A04**/MF **A01**
Rockwell International, Thousand Oaks, CA. Science Center.
Lifetime Prediction of Organic Coating/Metal System.
Annual rept. 1 Jul 79-30 Jun 80,
Florian Mansfeld. Aug 80, 54p Rept no. SC5222.1AR
Contract N00014-79-C-0437

The objective of this project is to develop a lifetime model which takes into account the corrosion susceptibility of metal substrates, the properties of organic coatings and the corrosivity of the environment. The results obtained during the first year include the characterization of steel surfaces which had been subjected to different pretreatment methods using surface chemistry analysis (AES, XPS, SEM), surface energetics analysis, and surface mapping. The deposition kinetics and surface morphology of zinc phosphate coatings on steel surfaces with different pretreatment have been studied with preliminary analysis using a.c. impedance techniques. These results provide a quantitative characterization of the substrate and provide input for a lifetime prediction model of polymer coated metal. (Author)

PATENT-4 233 107 Not available NTIS
Department of Commerce, Washington, DC.
Ultra-Black Coating Due to Surface Morphology.
Patent,
Christian E. Johnson, Sr. Filed 20 Apr 79, patented 11 Nov 80, 9p PB81-116642, PAT-APPL-6-031 706
Supersedes PB-296 764.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

The invention relates to a method of producing an ultra-black surface coating with an extremely high light absorption capacity on a variety of substrates, this ultra-black surface coating being produced by preferential chemical attack on an electroless nickel-phosphorus alloy deposited on the substrate in a bath consisting of aqueous nitric acid solution. The resulting blackness of the surface coating is associated with a unique morphology consisting of a multitude of microscopic conical pores etched perpendicularly into the surface.

PB81-126203 Not available NTIS
National Bureau of Standards, Washington, DC.
Thin Zinc Films on Aluminum,
D. Lashmore. Mar 80, 6p
Sponsored in part by Aluminum Association, Washington, DC.
Pub. in Jnl. Electrochem. Soc. 127, n3 p573-578 Mar 80.

The deposition of thin zinc films on aluminum substrates was investigated by transmission electron microscopy and by electron diffraction.

11D. Composite Materials

AD-A092 094/2 PC **A08**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Analysis of Combustion and Heat Transfer in a Porous Graphite Medium.
Master's thesis,
Costa Sozon Vatikiotis. Jun 80, 158p

The problem of a porous graphite fiber plate subject to combustion is formulated. The transient one-dimensional model leads to two heat transfer equations on the graphite and air, and a mass transfer equation on the oxygen. In addition to a combustion heat generation term, the heat transfer model includes the mechanisms of conduction, radiation between fibers, and convection due to induced air flow through the mat. The mass transfer model includes diffusion and convection mechanisms, as well as a combustion consumption term. The temperature dependency of the system parameters is taken into account. The resulting nonlinear, coupled partial differential equations are solved by a Galerkin formulation of the finite element method. A number of computer analysis results are presented. The results show the effects of initial conditions, plate thickness, fiber diameter and air flow rate on ignition and extinction. (Author)

AD-A092 194/0 PC **A02**/MF **A01**
Oklahoma Univ., Norman. School of Aerospace, Mechanical and Nuclear Engineering.
Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
Technical rept.,
Charles W. Bert. Aug 80, 14p Rept nos. OU-AMNE-80-17, TR-18
Contract N00014-78-C-0647

A discussion is given on the importance of damping in fiber-reinforced composites and is followed by concise definitions of the various measures of damping. The current state of the theory of damping in fiber-reinforced composites is reviewed for perfectly-bonded viscoelastic composites, yielding-matrix composites, and those in which slip takes place at the fiber-matrix interface. General trends in stiffness and damping of composites with polymeric matrices are reviewed. (Author)

AD-A092 197/3 PC **A03**/MF **A01**
Oklahoma Univ., Norman. School of Aerospace, Mechanical and Nuclear Engineering.
Vibration of Cylindrical Shells of Bimodulus Composite Materials.
Technical rept.,
Charles W. Bert, and M. Kumar. Oct 80, 32p
Rept nos. OU-AMNE-80-20, TR-19
Contract N00014-78-C-0647

A theory is formulated for the small-amplitude free vibration of thick, circular cylindrical shells laminated of bimodulus composite materials, which have different elastic properties depending upon whether the fiber-direction strain is tensile or compres-

sive. The theory used is the dynamic, shear deformable (moderately thick shell) analog of the Sanders best first approximation thin-shell theory. By means of tracers, the analysis can be reduced to various simpler shell theories, namely Love's first approximation, and Donnell's shallow-shell theory. As an example of the application of the theory, a closed-form solution is presented for a freely supported panel or complete shell. To validate the analysis, numerical results are compared with existing results for various special cases. Also, the effect of the various shell theories, thickness shear flexibility, and bimodulus action are investigated. (Author)

PATENT-4 226 800 Not available NTIS
Department of the Air Force, Washington, DC.
Synthesis of Acetylene-Terminated Compounds.
Patent,
Lewellyn G. Picklesimer. Filed 14 Jun 79, patented 7 Oct 80, 6p AD-D007 882/4, PAT-APPL-6-048 322
Supersedes PAT-APPL-6-048 322, AD-D006 220.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

Phenolic materials containing propargyl groups are prepared by reacting a polyhydric, phenolic material with propargyl bromide, the reaction being conducted in an aqueous sodium hydroxide solution. The products can be thermally polymerized to polymers which are useful as adhesives and as matrix resins in the fabrication of composites. (Author)

SAND-80-0881 PC **A04**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Elastic Moduli of Boron Carbide/Copper Composites from -40 exp 0 C to 800 exp 0 C by Ultrasonic Methods.
J. H. Gieske. Oct 80, 63p
Contract AC04-76DP00789

An ultrasonic through-transmission technique for high attenuating materials was developed to determine the ultrasonic longitudinal and shear velocities in B sub 4 C/Cu composites to 800 exp 0 C. Ultrasonic velocity data was used to calculate Young's modulus, shear modulus, and Poisson's ratio for the composites from -40 exp 0 C to 800 exp 0 C. 5 figures, 1 table. (ERA citation 06:001103)

11E. Fibers and Textiles

AD-B029 209/4 PC **A03**/MF **A01**
Fabric Research Labs Inc Dedham Mass
Exploratory Development of Coated Fabric for Fire Proximity Suits.
Technical rept. Apr 76-Dec 77,
Norman J. Abbott. Jun 78, 32p CEEDO-TR-78-21, AFML-TR-78-10
Contract F33615-76-C-5315
Distribution limitation now removed.

An aluminum-colored, coated outer fabric for use in fire proximity suits has been developed. The basic fabric used was a filament Kevlar fabric weighing 6.7 oz/sq yd. This was primed with Viton L-31, followed by three coats of Viton A containing bronze pigment, a polyurethane topcoat containing aluminum pigment, and a finish coat of clear polyurethane. The fabric does not burn, and exhibits good resistance to heat transfer. It is expected to be more comfortable and durable than the presently used aluminized Novatex fabric. Three hundred yards of the fabric were delivered to the Air Force for manufacture of experimental fire proximity suits of conventional design, and 30 yards of manufacture of six experimental suits of unconventional design. (Author)

PAT-APPL-6-180 544 PC **A02**/MF **A01**
Department of Agriculture, Washington, DC.
Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
Patent Application,
John G. Frick, Jr., and Robert J. Harper, Jr. Filed 25 Aug 80, 7p PB81-129595

This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

New compounds in the class of sigma, omega-bis(4,5-dihydroxy-3-methyl-2-oxoimidazolidin-1-yl)alkanes have been prepared from the reaction of glyoxal and an alkylenebis(3-methylurea). These compounds are useful as formaldehyde-free finishing agents for textiles containing cellulose.

PATENT-4 231 747 Not available NTIS
Department of Agriculture, Washington, DC.
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
Patent,
Nathan H. Koenig, and Mendel Friedman. Filed 16 Jul 79, patented 4 Nov 80, 4p PB81-129389, PAT-APPL-6-057 858
Supersedes PB80-114820.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

Proteinaceous fibers are modified by first contacting the fibers with an aqueous solution of a cupric salt of a carboxylic acid containing from 2-18 carbon atoms and then contacting the so-treated fibers with a hot, semipolar, water-miscible organic solvent. The modified fibers exhibit increased resistance to shrinkage.

PB81-855397 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Synthetic Fibers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Walter Van Put. Jun 80, 180p NERACEI NT0564
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide citations cover information on chemistry and technology of synthetic and manmade fibers. Applications, dyeing, chemical, and physical properties of synthetic fibers are also discussed. (Contains 143 citations.)

11F. Metallurgy and Metallography

AD-A091 945/6 PC **A03**/MF **A01**
Dayton Univ., OH. Research Inst.
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
Interim technical rept. Nov 78-Mar 80,
Russell R. Cervay. Jul 80, 29p UDR-TR-80-29, AFWAL-TR-80-4094
Contract F33615-78-C-5002

The alloy 7010 has been represented by its manufacturer as being a high strength/high toughness, and stress corrosion cracking resistant aluminum alloy. Like the 7050 alloy, it is a high purity aluminum alloy using Zr as the grain refiner alloying element rather than Cr. Also, the Cu alloying content is higher than normal for most 7000 series aluminum alloys. Tensile test results indicate the average room temperature tensile strength was 73 KSI (502 MPa) and the yield strength was 64 KSI (440 MPa) for longitudinal grain orientation test specimens. For the same test conditions, the ductility as indicated by an elongation of 13 percent (1 in., 25.4 mm G.L.) was directly comparable to alloy 7175-T73 in the thick plate product form. The average fracture toughness at 72F (22C) for a (L-t) orientation test specimen was 37 KSI sq. rt. in. (40.6 MPa sq. rt. in.) which is approximately equal to alloy 7050-T73651. The material was not found to be corrosion cracking sensitive; the room temperature threshold for stress corrosion cracking in a 3.5% Wt. NaCl solution was determined to be in excess of 70 percent of the room temperature fracture toughness. The materials room temperature constant amplitude fatigue crack growth rate was equivalent to the more cracking resistant 7000 series alloys (7475 and 7050). An increase in the test temperature from 72F (22C) to 250F (121C) caused an increase in excess of 200 percent in the fatigue crack growth rate. A further increase in test temperature to 350 F (176C) caused a small increase in the crack growth rate beyond that existing at 250F (121C). (Author)

AD-A092 169/2 PC **A02**/MF **A01**
Pennsylvania Univ., Philadelphia. Dept. of Materials Science and Engineering.
Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
Interim rept.,
Xong-Xin Zhou, Shin-Cheng Fu, and C. J. McMahon, Jr. 17 Oct 80, 25p Rept no. TR-2
Contract N00014-79-C-0991

Auger electron spectroscopy was used to study segregation of Group IVB solutes to the surfaces of individual grains of a polycrystalline Fe-3.1 pct Si-0.06 pct Sn-0.004 pct C alloy heated in UHV. As the temperature was increased C, Si, and finally Sn segregate in that order, consistent with their diffusivities in Fe, each succeeding element expelling the preceding from the surface. The interactions between C and Si and between Si and Sn appear to be strongly repulsive, while the interaction between C and Sn appears weak; this is discussed in terms of a size effect. The segregation behavior of each element depends on the crystallographic orientation of the surface; C and Sn seem to follow similar patterns, while Si behaves somewhat differently. (Author)

AD-A092 186/6 PC **A02**/MF **A01**
Illinois Univ. at Urbana-Champaign.
Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
Final technical rept. Jan 77-30 Jun 80,
E. N. Pugh, and R. A. Yeske. 18 Sep 80, 13p
AFOSR-TR-80-1120
Grant AFOSR-77-3175

A study has been made of the mechanism of hydrogen embrittlement (HE) in Al-Zn-Mg alloys, and of the role of hydrogen in the intergranular stress-corrosion cracking (I-SCC) of these alloys. Up to 300 ppm (1 at pct) hydrogen was introduced into a high-purity Al-5.6Zn-2.6Mg alloy, either by room temperature polishing with aqueous slurries of alumina particles or by exposure to water-vapor-saturated air (WVSA) at 70 C, and subsequent tensile tests (stress rate approx 0.0001/s) in inert environments caused brittle intergranular fracture. Embrittlement was found to be reversible, the tensile properties being completely restored when the hydrogen was outgassed. At low hydrogen contents, embrittlement was suppressed by the use of high strain rates (approx 0.01/s), but could not be suppressed by impact testing at large hydrogen concentrations. The intergranular fracture surfaces were observed to be associated with a fragmented layer, and electron-diffraction experiments indicated that it corresponded to a hexagonal aluminum hydride, Al H3, with a = 2.90 A and c = 4.55 A. This hydride, considered to be stress-induced, was unstable in laboratory air, slowly decomposing to FCC Al. It is concluded that internal HE in this alloy occurs by repeated cycles of the formation and rupture of this brittle hydride.

AD-A092 247/6 PC **A03**/MF **A01**
Rockwell International, Thousand Oaks, CA. Science Center.
The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
Technical rept.,
M. Shibata, and Kanji Ono. Jun 74, 50p Rept no. TR-10
Contract N00014-67-C-0439
Prepared in cooperation with California Univ., Los Angeles. School of Engineering and Applied Science, Rept. no. UCLA-ENG-7457.

The strain energy of a spheroidal inclusion was evaluated exactly using the Eshelby theory. Numerical results for an oblate spheroid are presented in a parametric form in terms of the transformation strain tensor. Using atomistic transformation mechanisms, the transformation strain was determined for bcc-hcp martensitic transformation in Ti and its alloys. The lattice correspondence satisfied the Burgers relationship and the c/a-ratio in the product phase was taken as 1.586. The habit plane was predicted on the basis of the strain energy minimization principle. Results of the calcu-

lation indicate that the strain energy is minimized when the morphology of hcp Ti martensite is a thin disc-shaped inclusion lying on a plane close to (9 9 13) sub B, in excellent agreement with experimental observations. The present approach is discussed in detail and compared with the crystallographic theory based on the invariant plane strain hypothesis. (Author)

AD-A092 273/2 PC **A04**/MF **A01**
Aerospace Corp., El Segundo, CA. Materials Sciences Lab.
Deterioration of Superpolished Metal Mirrors by Blue Haze.
Interim rept.,
R. J. Champetier, and R. P. Giguere. 1 Nov 80, 52p TR-0081(6950-05)-1, SD-TR-80-74
Contract F04701-80-C-0081

Superpolished mirrors lose their low-scatter finish in industrial atmospheres because of a corrosion process. This degradation is investigated by exposing mirrors in controlled gaseous environments, monitoring changes with scatter measurements, microscopically and elementally analyzing the surface films. Blue haze results when nickel from the mirror combines with airborne pollutants and water to form an amorphous salt, which can coat the nickel and etch it. Preventive techniques to keep the metal clean and free of water films are also discussed. (Author)

AD-A092 302/9 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Calculation of the Oxide Growth Rate of 2-1/4 Cr - 1 Mo Steel in Air and the Subsequent Measurement of the Strain Required to Crack the Oxide.
Master's thesis,
Robert Lawrence Langdon. Sep 80, 69p

This study examined the oxide growth rate of 2-1/4 Cr - 1 Mo steel in air under isothermal growth conditions. Two oxidizing temperatures were used, 403 C and 499 C, for five specimens each with oxidizing times varying from 6 hours to 700 hours. Average oxide growth rate as a function of time and temperature was found to be rate = 0.0021 exp -12950/RT whereas maximum oxide growth rate corresponds to rate = 0.0045 exp -13520/RT. These values were found to be in general agreement with the limited data available in the literature. The second part of the experiment related to the measurement of the strain required to crack the oxide. Discrete surface strains were imparted to oxidized specimens via a four-point-bend straining apparatus. The strained specimens were optically scanned for cracks with a stereoscope microscope capable of 70X magnification. A process of crack decoration was employed to enhance crack visibility. Because of certain equipment limitations, however, only an upper limit of strain tolerance could be determined. Methods of improving strain tolerance measurements are discussed.

AD-A092 432/4 PC **A02**/MF **A01**
Pennsylvania State Univ., University Park. Dept. of Materials Science and Engineering.
Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
Technical rept.,
M. Zamanzadeh, A. Allam, H. W. Pickering, and G. K. Hubler. 27 Sep 79, 14p Rept no. TR-14
Contract N00014-75-C-0264
Pub. in Jnl. of the Electrochemical Society, v127 n8 p1688-1693 Aug 80.

No abstract available.

AD-A092 433/2 PC **A02**/MF **A01**
Pennsylvania State Univ., University Park. Dept. of Materials Science and Engineering.
On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
Technical rept.,
C. Kato, J. E. Castle, B. G. Ateya, and H. W. Pickering. 20 Mar 80, 22p Rept no. TR-15
Pub. in Jnl. of the Electrochemical Society, v127 n9 p1890-1903 Sep 80. Supersedes Rept. nos. TR-11 dated 6 Nov 78, AD-A079 959 and TR-12 dated 6 Nov 79, AD-A079 963.

No abstract available.

AD-A092 473/8 PC **A03**/MF **A01**
Naval Research Lab., Washington, DC.
Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
Memorandum rept.,
J. M. Krafft. 21 Nov 80, 30p Rept no. NRL-MR-4406

In earlier NRL work, Ti-6Al-4V in four levels of interstitial oxygen content and a single Ti-8Al-1Mo-1V alloy plate were heat treated to alter grain size and/or microstructural character; the effect on fatigue crack propagation rate was measured. In this work, small tensile specimens of these materials are subjected to slow strain-controlled cyclic deformation leading to rupture in the 5-500 cycle range. Indication of crack initiation as well as rupture life are compared relative to the plastic excursion strain. On this basis, effects of grain size and oxygen content are not clearly discriminated. Yet, some of the materials exhibit markedly performance. This improvement seems to be related to a characteristic evolution in the shape of the cyclic stress-strain curve. Here, relative to a full convex hysteresis loop of early cycles, the later cycles exhibit a reduced stress level, or cyclic softening, in the first half of the excursion, followed by a resurgence of strength to initial stress levels in the latter portion. The enhanced strain hardening rate enabling this terminal strength restoration is thought to stabilize the deformation, reducing the amount of stress-relaxation-induced tensile strain. Taking such strain as an increment of damage in a cumulative cyclic creep strain criterion provides a correlation between the evolving shape of the cyclic stress-strain curve and the low cycle fatigue endurance. Results indicate the absolute increase in the terminal plastic strain hardening rate to be a constant of a material, independent of the cyclic strain excursion. (Author)

AD-886 969/5 PC **A06**/MF **A01**
United States Steel Corp Monroeville PA Applied Research Lab
Preliminary Development of an HY-180 Weldment System.
Final rept.,
L. F. Porter, P. J. Konkol, D. S. Dabkowski, L. P. Connor, and J. M. Barsom. 16 Aug 71, 102p
Rept no. ARL-B-70003
Contract NObs-94535
Distribution limitation now removed.

During the past eight years U. S. Steel has been developing an HY-180 weldment system for submarine hulls. Several weldment systems were considered and a 10Ni-Cr-Mo-Co steel was found to provide the best combination of strength, toughness, corrosion resistance, and weldability. Accordingly, most of the work was devoted to determining the properties of production plates and other product forms, and examining the producibility, formability, machinability, physical properties, and other structural characteristics of the 10Ni-Cr-Mo-Co steel and of GTA weldments. The steel, weld metal, and welding procedures evolved are now considered to be at such a state of development that they can be used with a minimum of additional development to produce the hull of a deep submersible, such as DSSV. Moreover, for large structures, such as submarine hulls, the feasibility of using high-deposition-rate welding processes has been demonstrated. Future studies should concentrate on developing practical welding techniques and equipment for actual shipyard construction and on the development of alternative and less costly methods of producing the high-quality steel required for the HY-180 weldment system.

CEA-CONF-4801 PC **A02**/MF **A01**
CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Dept. des Etudes Mecaniques et Thermiques.
Tests on Mechanical Behavior of 304 L Stainless Steel under Constant Stress Associated with Cyclic Strain.
J. Lebey, and R. Roche. 1979, 12p CONF-790820-4
International conference on mechanical behaviour of materials, Cambridge, UK, 20 Aug 1979.
U.S. Sales Only.

Mechanical analyses of structures, to be efficient, must incorporate materials behavior data. Among the mechanisms liable to cause collapse, progressive distortion (or ratcheting) has been the subject of only a few basic experiments, most of the investigations being theoretical. In order to get meaningful results to characterize materials behavior, an experimental study on ratcheting of austenitic steels has been undertaken at the C.E.A. This paper gives the first results of tests at room temperature on thin tubes of 304L steel submitted to an axial constant stress (primary stress) to which is added a cyclic shearing strain (secondary stress). The tests cover a large combination of the two loading modes. The main results consist of curves of cumulative iso-deformation in the primary and secondary stress field (Bree type diagrams). Results are given for plastic deformations ranging from 0.1 to 2.5% up to N=100 cycles. (Atomindex citation 11:524870)

DOE/ER/05002-13 PC **A03**/MF **A01**
Massachusetts Inst. of Tech., Cambridge.
Mechanism for Diffusion Induced Grain Boundary Migration.
R. W. Balluffi, and J. W. Cahn. Aug 80, 28p
Contract AS02-78ER05002

Grain boundaries are found to migrate under certain conditions when solute atoms are diffused along them. This phenomenon, termed diffusion induced grain boundary migration (DIGM), has now been found in six systems. The observed phenomenon and empirical data are used to discard certain concepts for the driving force and the mechanism. A mechanism is proposed in which differences in the diffusion coefficients of the diffusing species along the grain boundary cause a self-sustaining climb of grain boundary dislocations and motion of their associated grain boundary steps. (ERA citation 06:001071)

DOE/ER/05002-14 PC **A02**/MF **A01**
Massachusetts Inst. of Tech., Cambridge.
Group Representation of Bicrystal Invariant Translations with an Application to the Topology of Secondary Grain Boundary Dislocations.
A. Brokman. Sep 80, 24p
Contract AS02-78ER05002

All DSC-Lattice translations of one lattice with respect to the second lattice of a bicrystal are described as a group. It is shown that the matrix representation of this group can be used to solve topological problems connected with secondary grain boundary dislocations (SGBDs) such as finding the step in the boundary associated with the SGBD. We have formulated this problem by establishing the step vector S associated with the Burgers vector b of the SGBD in a cubic bicrystal. The problem is then solved in 2D, and the way to generalize to 3D is indicated. (ERA citation 06:001072)

DOE/ET/10460-14 PC **A03**/MF **A01**
Notre Dame Univ., IN. Dept. of Metallurgical Engineering and Materials Science.
Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.
N. F. Fiore, T. H. Kosel, C. Rao, V. Desai, and J. Fulcher. 19 Sep 80, 29p
Contract ASO2-77ET10460

This report describes research aimed at establishing quantitative relationships between microstructure and wear resistance of highly alloyed materials, including high-Cr white irons and experimental Co-base and Ni-base powder metallurgy (PM) alloys now used or potentially to be used in coal mining, handling and gasification. The specific types of wear under study are low-stress abrasion and gouging wear encountered in mining, coal converson and transfer applications. (ERA citation 06:001079)

IAEA-R-1648-F PC **A02**/MF **A01**
International Atomic Energy Agency, Vienna (Austria).
Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
S. Rapeanu. Nov 79, 12p
U.S. Sales Only.

Cold neutrons from the WWR-S research reactor in Bucharest and a time-of-flight spectrometer were used in measurements of double differential cross section in liquid metals and alloys. The experimental data were analyzed to determine the symmetrical scattering law, the intermediate scattering function, the velocity autocorrelation function, and the mean square displacement. The correlation functions allowed to draw conclusions about the atomic notions as a function of time. Liquid Sn and Sn-Bi alloys: the symmetrical scattering law as a function of energy transfer in the K space, for the values between 1.52 and 2.2 A exp - 1 indicate that no well defined frequency can be identified as collective mode. Liquid Bi: the dynamic structure factor on this metal at 55 K and 675 K was studied as a function of energy transfer; the positions of the inelastic peaks in the spectral function were used for calculating dispersion relation which shows a strong correlation with the static structure factor. Liquid Pb: the determination of the dynamic structure factor at 350 K and 400 K permitted to calculate the dynamical structure factor. Multiple scattering of neutrons requires extensive correction, particularly at low values of the structure factor. The theoretical models were compared with the experimental results; it was found that none of these models described satisfactorily the behaviour of liquid Pb at low values of the dynamic structure factor. ZrNb and Zircaloy-4: determination of the phonon density of states were made after extensive corrections regarding multiple scattering. From the phonon density, the specific heat and Debye temperature were calculated. (Atomindex citation 11:519415)

IAEA-R-1827-F PC **A02**/MF **A01**
International Atomic Energy Agency, Vienna (Austria).
Moessbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
Y. Ishida. Oct 79, 22p
U.S. Sales Only.

Moessbauer effect was used in the investigations of defect structures of Al- exp 57 Co alloys introduced by electron irradiation and grain boundary embrittlement in binary iron alloys containing /sup 119m/Sn nuclei. The behavior of tin during aging of Al-Cu-Sn alloys was examined by Moessbauer spectra during isothermal annealing of the samples at various temperatures. Similar investigations were conducted for polycrystalline and bicrystalline silver foils containing /sup 119m/Sn sandwiched in the boundary. The binding state of tin atoms segregated at the grain boundary of fine grained iron and iron alloys provided the clues for the embrittlement of iron alloys. The inhibiting effect of Ti, V, and Mo can be explained by the usurpation of the electrons in the tin atoms to the 3d shell of iron. Moessbauer effect was extensively applied in studying the aging behaviour of aluminium alloys in quenching, ion-implantation and electron irradiation processes. (Atomindex citation 11:519149)

JAERI-M-8081 PC **A03**/MF **A01**
Japan Atomic Energy Research Inst., Tokyo.
Zircaloy Cladding Embrittlement Due to Steam Oxidation in Stagnant Steam Condition.
H. Uetsuka, T. Furuta, and S. Kawasaki. Feb 79, 26p
In Japanese.
U.S. Sales Only.

In connection with the zircaloy cladding embrittlement due to inner surface oxidation during a LOCA, ring-like zircaloy-4 specimens were oxidized in stagnant steam under a calculated LOCA transient temperature history and the ductility loss was measured. It was found that the principal factor influencing the embrittlement behavior of zircaloy-4 oxidized in stagnant steam is the absorbed hydrogen. Ring compression test at 100 exp 0 C showed that ductility of the specimens decreases rapidly with increase of the hydrogen content; the specimens with more than about 500 wt.ppm of absorbed hydrogen are brittle. Ring compression test at 300 exp 0 C showed that the specimens with about 1000 wt.ppm of absorbed hydrogen oxidized in stagnant steam at above 1000 exp 0 C are brittle. (Atomindex citation 11:524827)

JAERI-M-8153 PC **A02**/MF **A01**
Japan Atomic Energy Research Inst., Tokyo.
Metallurgical and Environmental Factors Influencing Creep Behaviour of Hastelloy-X.
K. Kiuchi, and T. Kondo. Mar 79, 14p
U.S. Sales Only.

Creep and rupture behaviours of Hastelloy-X and its modified version were examined with special reference to the effect of different test environments; i.e. air, high vacuum and the simulated HTR helium coolant. The respective environments showed different effects. The vacuum environment of about 10 exp -8 torr. gave best reproducible behaviour with essentially no surface-to-volume ratio effect. Such size effect was significant in the other two environments. The simulated HTR environment was characterized in its potentiality of both oxidizing selected alloy constituents and carburization. The observed behaviour was attributed to the depletion of strengthning solute elements caused by the surface reactions and the associated solid state reactions. (Atomindex citation 11:524819)

JAERI-M-8210 PC **A02**/MF **A01**
Japan Atomic Energy Research Inst., Tokyo.
Oxidation Kinetics and Spallation of Oxide Film of the Structural Metal in HTR Helium under Thermal Cycles.
M. Shindo, T. Suzuki, and T. Kondo. Apr 79, 12p
U.S. Sales Only.

Composition variation of the corrosion product spalled during oxidation in simulated HTR coolant under temperature cycling has been examined by activation analysis. Comparison was made among three heats having different Mn, Al, Si and Co contents, which influence the behaviour of the material. The heat with better protective oxide film and without intergranular attack was found to cause minimum release of the radioactive products. There is intimate relation between chemical composition of the oxide film and corrosion resistance. Discussion is made on the factors controlling the release rate of Co into the environment. (Atomindex citation 11:524826)

JAERI-1258 PC **A03**/MF **A01**
Japan Atomic Energy Research Inst., Tokyo.
Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
S. Muraoka. Feb 79, 45p
In Japanese.
U.S. Sales Only.

The compatibility of tantalum with graphite and nuclear fuel materials of UO sub 2 and UC has been studied in the temperature ranges of 800 exp 0 - 2350 exp 0 C, 1400 exp 0 - 2000 exp 0 C and 800 exp 0 - 2000 exp 0 C respectively. From measured thickness of reaction layers of TaC and Ta sub 2 C, carbon diffusivity in the compounds are calculated. Arrhenius-type plots of the diffusion coefficients show that an inflection occurs in both curves at about 1800 exp 0 C. Above this temperature the diffusion coefficient of D sub(Ta sub 2 C)sup(C) increases with temperature at a higher rate than that of D sub(ta c)sup(c), which could be related with the existence of alpha - beta phase transformation of Ta sub 2 C in the vicinity of the temperature. Tantalum shows good compatibility with stoichiometric UO sub 2 in the temperature range studied, however worse with hyperstoichiometric UO sub(2+x), where the reaction between tantalum and oxygen occurs. Tantalum is found to be very reactive with UC. Above 1600 exp 0 C, there is observed the ingress of both carbon and uranium into tantalum matrix. At 1800 exp 0 C the ingress of uranium is higher than that of carbon. The preformation of a thin carbide layer on the surface of tantalum is not effective for preventing the reaction between tantalum and UC. By the standard tracer technique of exp 14 C the reaction between Hastelloy X and graphite in vacuo and in helium has been studied in the temperature range of 700 exp 0 - 1100 exp 0 C. The rate-determining mechanism of carbon penetration in the alloy is found to be grain-boundary diffusion, in which the oxide layer formed on the alloy surface plays two opposite roles, accelerative and inhibitive. (Atomindex citation 11:524879)

JINR-R-14-12649 PC **A02**/MF **A01**
Joint Inst. for Nuclear Research, Dubna (USSR).
Ion Bombardment Effect on the Structure of Metallic Films.
I. B. Enchevich, F. A. Tagirova, M. V. Marinov, N. I. Balalykin, and A. V. Skrypnik. 1979, 20p
In Russian.
U.S. Sales Only.

The results of effect of bombardment of Ag and NbTi films, by argon and nitrogen ions on texture and grain size are presented. It is shown that depending on irradiation conditions (ion energy of 4 and 5 keV, beam current density of 10-100 mkAxcm exp -2 , irradiation time - 5-40 min) chemically bond110chemically bond and chemically bond111chemically bond texture could be obtained without employing heat treatment. (Atomindex citation 11:524923)

LYCEN-7926 PC **A02**/MF **A01**
Lyon-1 Univ., Villeurbanne (France). Inst. de Physique Nucleaire.
Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
J. P. Thomas, M. Fallavier, P. Spender, and E. Francois. Apr 79, 22p
U.S. Sales Only.

By use of 2 MeV lithium ion backscattering and transmission electron microscopy techniques, a part of xenon atoms introduced by implantation in aluminium metal under the initial oxide layer is shown to be tranported by the moving metal-oxide interface during anodic oxidation. From specific anodization conditions (V/sup ct/, T = 90 exp 0 C) this splitting of the initial xenon distribution is interpreted in terms of bubble formation and growth above a given local concentration threshold. A schematic model for this behavior evolution is proposed. This dose dependence is of practical interest in the determination of transport numbers. Although unambiguously measured they may be subject to significant systematic uncertainties, which are discussed. (Atomindex citation 11:519235)

MIT-EL-80-001 PC **A12**/MF **A01**
Massachusetts Inst. of Tech., Cambridge. Energy Lab.
Prospects for the Recovery of Uranium from Seawater. Final Report.
F. R. Best, and M. J. Driscoll. Jan 80, 260p
MITNE-231
Contract AM01-76EI02295

A computer program entitled URPE (Uranium Recovery Performance and Economics) has been developed for analysis of a plant recovering uranium from seawater. The conceptual system design consists of a floating oil-rig type platform, using seawater forced through hydrous titanium oxide. Uranium is recovered from the seawater by adsorption and eluted later. The equilibrium isotherm and the diffusion constant for the uranyl-HTO system, which are needed for bed performance calculations, have been calculated. The URPE program has been benchmarked against previous studies by ORNL and Exxon, and found to make comparable performance and economic estimates. The URPE code was then used to identify optimum bed operating conditions. Thin beds of small, thinly-coated particles are the preferred bed configuration, and actively pumped systems outperform current driven units. Based on URPE, the minimum expected costs of uranium recovered from seawater would be no lower than approx. 316 (1979$)/lb U sub 3 O sub 8 for state-of-the-art adsorber material (capacity equal to 210 mg U/kg Ti), but might be reduced to the level of breakeven attractiveness of approx. 150 (1979$)/lb U sub 3 U sub 8 if at least a four-fold increase in adsorption capacity could be achieved. (ERA citation 05:037688)

ORNL/CSD-66 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Composition of Solidified Binary Alloy from a Simple Solidification Model.
D. G. Wilson, A. Lacey, and A. Solomon. Oct 80, 24p
Contract W-7405-ENG-26

An expression is obtained for the composition as a function of position of a binary alloy solidified from

its melt. The simple model has uniform density, no material diffusion in the solid, and uniform temperature and concentration in the liquid. Provided that these assumptions hold, and no remelt occurs, the solid composition is independent of the mode of cooling. Only conservation of mass and the two component solid/liquid phase diagram are used. In the concentration profile obtained, only one component is present in the last increment of alloy solidified. The origin of this characteristics is discussed. An application of the analysis is made to a copper/nickel system. (ERA citation 06:001074)

PB81-121501 Not available NTIS
National Bureau of Standards, Washington, DC.
The Tantalum-Palladium Constitution Diagram.
Final rept.,
R. M. Waterstrat, B. C. Giessen, R. Koch, and R. C. Manuszewski. May 78, 6p
Sponsored in part by National Inst. of Dental Research, Bethesda, MD.
Pub. in Metallurgical Transactions, A. Physical Metallurgy and Materials Science 9A, p643-648 May 78.

The Ta-Pd alloy system has been investigated over the entire composition range using metallographic x-ray diffraction and quantitative electron microprobe methods. There are five intermediate phases and the crystal structures are known for all but one of these. A constitution diagram for the Ta-Pd system is presented.

PB81-121865 Not available NTIS
National Bureau of Standards, Washington, DC.
Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys.
G. M. Ugiansky, C. E. Johnson, D. S. Thompson, and E. H. Gillespie. 1980, 12p
Pub. in Proceedings of Stress Corrosion Cracking, The Slow Strain-Rate Technique, Toronto, Canada, May 2-4, 1977, American Society for Testing and Materials, Special Technical Publication 665, p254-265 1980.

The use of the slow strain rate stress corrosion testing technique for testing aluminum alloys is discussed. This technique is compared to the more frequently used alternate immersion test technique used for evaluating the susceptibility of aluminum alloys to stress corrosion cracking. Aluminum alloys (2124 and 7075) each in three heat treatments with differing susceptibilities to stress corrosion cracking were tested by both the statically loaded alternate immersion test and by the slow strain rate technique. The results of the tests are compared, and the slow strain rate test is shown to be a viable, rapid technique for determining the SCC susceptibility of aluminum alloys.

PB81-124109 PC **A08**/MF **A01**
Indian Lead Zinc Information Centre, New Delhi.
Cadmium Seminar 1980, Proceedings Held at the Lake Palace Hotel, Udaipur on 26 February 1980.
1980, 159p
Sponsored in part by Hindustan Zinc Ltd., Udaipur (Rajasthan) and Cominco Binani Zinc Ltd., Binanipuram (Kerala).

Contents:
- Cadmium, its alloys, uses of cadmium compounds in pigments, glazes and plastics;
- Role of cadmium in alkaline batteries, photocells, phosphors and solar cells;
- Cadmium plating and chemicals.

PB81-851313 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Extractive Metallurgy. January, 1970-October, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 233p
NERACUSGNT1669
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on extractive metallurgy and its various processes. Extraction of noble metals and processes for ocean floor nodules are also included. (Contains 200 citations.)

PB81-851321 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Extractive Metallurgy. January, 1976-October, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Oct 80,
Walter Van Put. Oct 80, 75p NERACEDBNT1669
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on extractive metallurgy and its various processes. Extraction of noble metals and processes for ocean floor nodules are also included. (Contains 69 citations.)

PB81-851339 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Extractive Metallurgy. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 176p NERACEI NT1669
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on extractive metallurgy and its various processes. Extraction of noble metals and processes for ocean floor nodules are also included. (Contains 171 citations.)

PNL-3344 PC **A04**/MF **A01**
Battelle Pacific Northwest Labs., Richland, WA.
Air Oxidation and Seawater Corrosion of Hastelloy S and Hastelloy C-4.
H. T. Fullam. Mar 80, 75p
Contract AC06-76RL01830

A program is currently under way at the Pacific Northwest Laboratory (PNL) to develop the data and technology needed to permit the licensing of exp 90 SrF sub 2 as a radioisotope heat source fuel for terrestrial applications. The WESF exp 90 SrF sub 2 storage capsule consists of a Hastelloy C-276 inner capsule (2 in. I.D. x 19 in. long) and a 316L stainless steel outer capsule (2-3/8 in. I.D. x 20 in. long). Preliminary experimental tests and theoretical calculations show that the WESF storage capsule is incapable of meeting current licensing requirements for heat sources that are to be used for terrestrial applications. Therefore, the DOE decision was to develop a new heat source design that would retain the existing WESF Hastelloy C-276 inner capsule and replace the current WESF outer capsule with a new outer capsule capable of meeting current licensing requirements. Based on a number of factors, Hastelloy S was selected as the outer capsule material. Hastelloy C-4 was selected as a backup material in case the Hastelloy S had to be rejected for any reason. This report summarizes the results of studies carried out to determine the effects of both air oxidation at heat source operating temperatures and seawater corrosion on the tensile properties of the outer capsule materials. (ERA citation 05:038375)

RISO-R-408 PC **A02**/MF **A01**
Risoe National Lab., Roskilde (Denmark).
Nonlinear Kinematic Hardening under Non-Proportional Loading.
N. S. Ottosen. Jul 79, 22p
U.S. Sales Only.

Within the framework of conventional plasticity theory, it is first determined under which conditions Melan-Prager's and Ziegler's kinematic hardening rules result in identical material behaviour. Next, assuming initial isotropy and adopting the von Mises yield criterion, a nonlinear kinematic hardening function is proposed for prediction of metal behaviour. The model assumes that hardening at a specific stress point depends on the direction of the new incremental loading. Hereby a realistic response is obtained for general reversed loading, and a smooth behaviour is assured, even when loading deviates more and more from proportional loading and ultimately results in reversed loading. The predictions of the proposed model for non-proportional loading under plane stress conditions are compared with those of the classical linear kinematic model, the isotropic model and with published experimental data. Finally, the limitations of the proposaed model are discussed. (Atomindex citation 11:524881)

SAND-80-1121 PC **A03**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Ultrasonic Measurement of Elastic Moduli of 17-4 pH Stainless Steel and Uranium -2 Molybdenum from -40 exp 0 C to 800 exp 0 C.
J. H. Gieske. Oct 80, 32p
Contract AC04-76DP00789

Young's Modulus, shear modulus, and Poisson's ratio for 17-4 pH stainless steel and uranium -2 molybdenum are calculated from ultrasonic longitudinal and shear velocities determined from -40 exp 0 C to 800 exp 0 C. The ultrasonic velocities were determined at elevated temperatures using a through-transmission buffer rod arrangement. An indium-gallium slurry bond was used as an ultrasonic couplant between Cupernickel 10 alloy buffer rods and the specimen. Microstructural changes and phase transitions in the specimens are evident from the temperature dependence of the ultrasonic data. 10 figures, 3 tables. (ERA citation 06:001081)

SAND-80-1945C PC **A02**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Active Measurements of Defect Processes in Shock Compressed Metals and Other Solids.
R. A. Graham. 1980, 13p CONF-800641-8
Contract AC04-76DP00789
International conference on the metallurgical effects of high strain rate deformation and fabrication, Albuquerque, NM, USA, 22 Jun 1980.

Solid samples have been routinely recovered for examination after having been subjected to high pressure shock loading. Such investigations have revealed many unique and interesting defect features and are essential if a detailed understanding of shock deformation processes is to be achieved. Nevertheless, examination of samples hours or days after they are compressed for only a few microseconds in a loading whose rise time may be subnanosecond fails to address the relationship between the residual defect structure and that existing during the loading. Electrical probes, and to a lesser extent optical probes, have provided reasonably direct measurements of defect states and some limited information on the evolution of these states. For example, measurements of the electrical resistance of metals provide an indication of vacancy concentrations. Similarly, measurements of shock-induced electrical polarization in insulating solids have provided evidence that large numbers of point defects are generated and displaced by the stress and velocity gradients within the shock fronts. Optical measurements of shock-induced bleaching of color centers in NaCl have provided some evidence for kinetics of the formation of higher-order point defects. This paper reviews the status of active measurements which have provided information about shock-induced changes in the defect state of solids. (ERA citation 06:001054)

UCID-18521 PC **A03**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
J. E. Harrar, F. E. Locke, C. H. Otto, Jr., S. B. Deutscher, and W. P. Frey. Jan 80, 39p
Contract W-7405-ENG-48

The Lawrence Livermore Laboratory brine treatment test system has been used to carry out a short-term evaluation of a number of proprietary chemical additives as antiscalants for the hypersaline brine of the Salton Sea Geothermal Field. In addition, a test of sludge seeding was conducted as a technique for scale control. The effect of each additive on the rate of precipitation of silica from the effluent brine at 90 exp 0 C was measured, and scaling rates of brine treated with nine of the additives were measured at 125 and 210 exp 0 C. Corrosion rates of mild steel in the treated brines were estimated using Petrolite linear polarization resistance equipment. None of the additives had a direct effect on the rates of silica precipitation, and none had a beneficial effect on the scale formed at 210 exp 0 C. At 125 exp 0 C, two additives, Drewsperse 747 (Drew Chemical) and SC-210 (Southwest Specialty Chemicals) afforded a marginal degree of scale reduction. The Austral-Erwin additive diminished the adherence of scale formed at points of

high velocity fluid flow but increased solids accumulation at other points. Sludge seeding shows some promise because it reduces the degree of silica supersaturation of the brine. Results of analyses of solids precipitated from effluent brines (Woolsey No. 1 and acidified Magmamax No. 1) are presented. (ERA citation 06:000656)

11G. Miscellaneous Materials

CEA-R-5006 PC **A17**/MF **A01**
CEA Centre d'Etudes de Bruyeres-le-Chatel, Montrouge (France).
Contribution to Research on the Elastic and Elastoplastic Behavior of Porous Materials.
These (D. es S.),
J. C. Frappier. Nov 79, 388p
In French.
U.S. Sales Only.

This three-part study concerns the mechanical behavior of porous materials. Part one, a bibliographical survey on the mechanical properties of porous materials, deals in turn with the following subjects: elastic properties, elasto-plastic boundary, plastic flow laws, fracture behavior and characterization methods. Part two is devoted to elastic behavior, giving the results of an experimental study on the elastic properties of a sintered nickel within a wide porosity range (5% to 55%) and establishing a theoretical law for the prediction of such characteristics; apart from the total porosity fraction and the elastic properties of the matrix this law can integrate parameters which represent the morphology of the material and may be determined empirically or by a modelisation, also proposed, of the structure of the material. Part three describes elasto-plastic, behavior and includes experimental results obtained on sintered nickel in cases of simple mechanical stress, the demonstration - based on energy considerations of a theoretical plasticity criterion accounting for the substance, a theoretical definition of the plastic Poisson's ratio and the establishment of flow laws associated with this criterion. (Atomindex citation 11:524862)

11H. Oils, Lubricants, and Hydraulic Fluids

AD-A092 289/8 PC **A03**/MF **A01**
Oklahoma State Univ., Stillwater. Fluid Power Research Center.
Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
Final rept.,
R. K. Tessmann, E. C. Fitch, and D. F. Norvelle.
13 Nov 80, 39p NAEC-92-132
Contract N68335-76-C-2280

This report presents the results of a study on the effect of particulate contamination upon the wear rates of oil-wetted components normally used in lubrication systems. The components primarily considered were rolling-element bearings, journal bearings, gears, and reciprocating seals. Particulate contaminant parameters are discussed. Component testing methods and systems are presented for each critical wear component category. (Author)

LYCEN-7868 PC **A05**/MF **A01**
Lyon-1 Univ., Villeurbanne (France). Inst. de Physique Nucleaire.
Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
These (3e Cycle),
C. Blanc. 1979, 83p
In French.
U.S. Sales Only.

The analytical surface technics such as ESCA, AES and SIMS are tested to be applied to a particular lubrication field. One deals with a 100 C sub 6 steel surface immersed in tricresylphosphate at 110 exp 0 C for 15 days. The nature of the first layers is studied after relevant solvant cleaning. An iron oxide layer is produced on the bearing surface, namely alpha Fe sub 2 -O sub 3 . ESCA, AES and SIMS studies show an overlayer of iron phosphate. The exact nature of iron phosphate is not clearly established but the formation of a ferrous phosphate coating can be assumed from ESCA analysis. (Atomindex citation 11:524609)

PB81-855215 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Sliding Contact Lubricants. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 74-May 80,
William V. Sassi. Aug 80, 20p NERACIAANT0333
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss the applications and performance of sliding contact lubricants. Also included is a description of studies done on the fatigue life and properties of specific lubricants. (Contains 028 citations.)

PB81-855223 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Sliding Contact Lubricants. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
William V. Sassi. Aug 80, 20p NERACEI NT0333
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography describe the performance and applications of electrical sliding lubricants. Also included are discussions of the prediction of traction, and the effect of lubricants on the contacts. (Contains 013 citations.)

11I. Plastics

AD-A091 887/0 PC **A03**/MF **A01**
Propellants, Explosives and Rocket Motor Establishment, Waltham Abbey (England).
The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
Dec 79, 41p DRIC-BR-71433
See also report dated Jan 80, AD-A092 105.

The report describes the effect of long term weathering on polysulphone. Both unpigmented samples and samples containing carbon black were exposed for up to 4 years at two tropical and one temperate site. Visual appearance, weight, tensile and flexural strength and electrical properties were recorded and used to monitor the effects of weathering on polysulphone. Unpigmented samples were found to embrittle rapidly while carbon black filled samples showed no loss of flexural strength and losses of ductility smaller than those observed with the natural material. (Author)

AD-A092 105/6 PC **A04**/MF **A01**
Propellants, Explosives and Rocket Motor Establishment, Waltham Abbey (England).
The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
Jan 80, 54p DRIC-BR-71961
See also AD-A091 887.

The report describes the effect of long term weathering on polyphenylene oxide (PPO) and Noryl (a polystyrene modified PPO). Both natural and carbon black containing samples of each were exposed for up to 4 years at two tropical and one temperate site. Visual appearance, weight, tensile and flexural strength and electrical properties were recorded and used to monitor the effects of weathering. (Author)

AD-A092 117/1 Not available NTIS
California Inst. of Tech., Pasadena. Arthur Amos Noyes Lab. of Chemical Physics.
Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
Takeshi Shimomura, Noboru Oyama, and Fred C. Anson. 5 Mar 80, 7p ARO-14557.12-C
Grant DAAG29-77-G-0092
Availability: Pub. in Jnl. of Electroanalytical Chemistry, v112 p265-270 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 130/4 PC **A02**/MF **A01**
Naval Research Lab., Washington, DC.
A New Method and Composition for Cleaning Metal Surfaces.
Memorandum rept.,
D. L. Venezky, and R. Panayappan. 10 Nov 80,
14p Rept no. NRL-MR-4404

A new method and composition for cleaning metal surfaces has been developed. The mixture consisting of a water soluble polymer, preferably polyvinylpyrrolidone (PVP), and a chelating agent can be applied to a rusty metal surface as a thick paste. The outer surface of the paste gradually hardens into an encapsulating film entrapping the cleaning agents inside and in contact with the rust until the surface is clean. After cleaning, the tape-like coating can be easily peeled from the cleaned surface and disposed of as a solid waste. Advantages of the new system include: economical and environmentally safe ingredients; and the ability to clean irregular surfaces and overhead objects found on ships, i.e., high-temperature valves, pipes and the like, without sandblasting or washing procedures. (Author)

AD-A092 241/9 PC **A07**/MF **A01**
Massachusetts Inst. of Tech., Cambridge. Dept. of Materials Science and Engineering.
Molecular Fraction Behavior in Oriented Polymers.
Final rept. 1 Sep 76-31 Aug 79,
Rakesh K. Popli, and David K. Roylance. Jun 80,
136p ARO-13630.3-MSX
Contract DAAG29-76-C-0044

Fracture in polymers of fibrous morphology is accompanied by covalent bond scission. Gel permeation chromatography (GPC) was used to monitor the changes in molecular weight distribution upon fracture in nylon 6 fibers. The bond rupture of 2.3 x 10 to the 18th power per cu cm measured from GPC is approximately five times the number of free radicals observed on fracture using electron spin resonance (ESR). GPC results showed that the high molecular weight component of the molecular weight distribution ruptures preferentially. Fourier transform infra-red spectroscopy (FTIS) observation of virgin, fractured, ground, and irradiated nylon 6 fiber specimens provided additional evidence supporting the results of GPC and ESR. A quantitative measure of the bond rupture could not be obtained from FTIS measurements. Some calculations for the structure of the fibrous morphology were performed: (1) Calculation for the number of tie molecules per gram. This was found to be approximately 1 x 10 to the 20th power per gram in nylon 6 fibers. (2) Calculation for the contribution of various amorphous components like cilia, chain loops (folds), chain ends, and tie chains. (3) A model for the distribution of the tie chain lengths. The experimental results of GPC and some of the calculations above were used to review the morphology and the fracture behavior of the fibrous structure. A new mechanism for the formation of submicroscopic cracks in stressed fibers is proposed. (Author)

BDX-613-2510 PC **A02**/MF **A01**
Bendix Corp., Kansas City, MO.
Preparation and Properties of an Internal Mold Release for Rigid Urethane Foam.
B. G. Parker. Aug 80, 22p
Contract AC04-76DP00613

Internal mold releases which can be added to urethane foam resin were synthesized and evaluated. The use of this type of release agent eliminates the repeated cleaning and recoating of molds, a procedure required with surface-applied mold releases. The internal mold releases investigated are the reaction products of a fatty acid ester, containing an active hydrogen, and a monoisocycanate. The use of an internal mold release

resulted in urethane foam with good releasability and excellent surface bondability. Several properties of rigid urethane foam formulated with the use of an internal mold release are presented. (ERA citation 06:001111)

PAT-APPL-6-182 562 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Perfluorocompounds.
Patent Application,
M. S. Toy. Filed 29 Aug 80, 15p AD-D007 856/8
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This abstract discloses a method for polymerizing octafluoronaphthalene and the resulting perfluorocompounds prepared therefrom. Polymerization is accomplished by reacting the octafluoronapthalene monomer with a mono or difluoroxyperfluoroalkane.

PAT-APPL-6-182 563 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Perfluorinated Epoxides.
Patent Application,
M. S. Toy. Filed 29 Aug 80, 11p AD-D007 858/4
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This invention concerns itself with the preparation of four novel perfluorinated epoxides. (Author)

PAT-APPL-6-182 564 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Perfluorocarbon Ethers.
Patent Application,
M. S. Toy. Filed 29 Aug 80, 7p AD-D007 857/6
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This invention concerns itself with the preparation of two novel perfluorocarbocyclic ethers. (Author)

PB81-139370 PC **A03**/MF **A01**
Yarsley Research Labs. Ltd., Chessington (England).
Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
W. Flavell, and A. P. Verrall. 17 Dec 79, 40p
HUD-0001569
Contract HUD-H-2404

This product development manual describes the materials specifications, cost estimate, and preparation of thermoplastic composition for YRL 100, a lead - based paint hazard abatement system, developed by Yarsley Research Laboratories (YRL) Limited. The constituents of YRL 100 are Elvex 420 and Elvax 4310, a copolymer and acid terpolymer; Holchst Wax 'S' (acidic wax), tioxide R - FC5; Permanex CNS, an antioxidant; zinc borate 2335, a fire retardant; trihyde A1 - AC; a nonwoven polyester carrier fabric; and siliconized paper release material. YRL 100 is a surface coating in roll form comprising a nonwoven polyester carrier fabric impregnated with a hot - melt thermoplastic. The fusible system may be applied to lead - painted substrates by means of heat and pressure using, for example, a domestic iron. The manual also contains a description of the preparation of thermoplastic composition PW1f/FR1, production of surface coating YRL 100, and application of the system to substrate materials. Tabular data are included.

PB81-139388 PC **A03**/MF **A01**
Yarsley Research Labs. Ltd., Chessington (England).
Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F),
W. Flavell, and A. P. Verrall. 14 Jan 80, 49p
HUD-0001570
Contract HUD-H-2404

The development and application of a lead - based paint hazard abatement system conforming to the requiments of HUD is described. The system is called YRL 100, and is developed by Yarsley Research Laboratories Limited (YRL). The system entails a surface coating in roll form comprising a nonwoven polyester carrier fabric impregnated with a hot - melt thermoplastic. The fusible system may be applied to lead - painted substrates by means of heat and pressure using, for example, a domestic iron. The report contains descriptions of hot - melt application by airless spray, alternative application techniques, and the carrier - based concept. Commercial production trials, release film studies, and field evaluations are enumerated. The report found that the system performed well in the field as a means of lead - paint hazard abatement but that the applicability appeared to be limited to substrates presenting a smooth surface. It adhered to surfaces such as wood and smooth plaster, but not to brick, rough plaster, or concrete. The system could be applied to more complex mouldings such as windows and door frames. Material costs for YRL 100, inclusive of release material, are approximately 16 cents per square foot. An appendix describes pertinent laboratory information. (Author abstract modified).

PB81-855272 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Walter Van Put. Jul 80, 139p NERACEI NT0371
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide reports are cited on research, development, and applications of radiation curing of polymers. Ultraviolet, photoinitiated, vacuum irradiated, and microwave curing or crosslinking of coatings, adhesives and elastomers with physical and mechanical properties are also included. (Contains 121 citations.)

PB81-855405 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nylon Products. June, 1976-May, 1980 (Citations from the Energy Data Base).
Rept. for Jun 76-May 80,
Walter Van Put. Jun 80, 88p NERACEDBNT0562
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide citations cover the use of nylons in machinery, electrical, and mechanical devices. Physical and chemical properties are also considered. (Contains 73 citations.)

11L. Wood and Paper Products

AD-A091 949/8 PC **A02**/MF **A01**
Forest Products Lab., Madison, WI.
Effect of Cross Grain on Stress Waves in Lumber.
Forest Service research paper,
C. C. Gerhards. May 80, 12p Rept no. FSRP-FPL-368

This report evaluates the effect of cross grain on the transit time of longitudinal compression stress waves in Douglas-fir 2 x 8 lumber. Results should aid development of lumber stress grading systems using modulus of elasticity measurements based on stress waves. (Author)

AD-A091 964/7 PC **A02**/MF **A01**
Forest Products Lab., Madison, WI.
Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
Forest Service research paper,
Hiram Hallock, and Pamela Giese. May 80, 9p Rept no. FSRP-FPL-369

Cutting yields from gang ripping hardwood lumber graded by the National Hardwood Lumber Association standard grades are determined using the technique of mathematical modeling. The lumber used is the same as that in an earlier mathematically modeled determination of cutting yields from traditional rough mill procedures. Mechanical cutting factors such as kerf, cutting lengths, and minimum salvage size are also the same in both studies. A comparison of yields between the two systems is made. While gang ripping produces higher total yields in all grades, the gain tends to be in the medium and shorter cutting lengths. (Author)

AD-A092 022/3 PC **A02**/MF **A01**
Forest Products Lab., Madison, WI.
Wood Products Used in Military Construction in the United States - 1962 and 1978.
Forest Service resource bulletin,
William H. Reid, and David B. McKeever. Mar 80, 16p Rept no. FSRB-FPL-8

Substantial quantities of lumber, poles and piling, plywood, particle-board, insulation board, and hardboard are used in constructing military facilities in the United States. A survey, as reported here, was made to estimate these quantities for 1962 and 1978. Consequently, comparisons of change were determined. Use of these materials was estimated by type of facility (operational, maintenance, training, research and development, warehouse and storage, administration, enlisted quarters, officers' quarters, community, sewage treatment and disposal, water supply and distribution, and docks and piers) and by type of use (structural, millwork, and facilitating). Factors of wood used are shown per $1,000 of construction value in both current and constant (1972) dollars. Constant dollars are used in order to provide more uniform base for comparing 1962 and 1978 wood products use factors. (Author)

AD-A092 023/1 PC **A02**/MF **A01**
Forest Products Lab., Madison, WI.
Wood Products Used in Constructing Conservation and Development Projects by the Corps of Engineers in the United States - 1962 and 1978.
Forest Service resource bulletin,
William H. Reid, and David B. McKeever. Mar 80, 15p Rept no. FSRB-FPL-9

This report presents estimates of the amounts of lumber, laminated lumber, poles and piling, and plywood used in constructing civil conservation and development projects by the Corps of Engineers in the United States during 1962 and 1978. The use of these materials is shown by category of nonmilitary construction (Public Use, Navigation, Erosion Control, Multiple Purpose Dam, and Flood Control), and by type of use (structural, millwork, and facilitating). Factors of wood use are shown per $1,000 of construction value in both current and constant (1972) dollars. Constant dollars are used in order to provide a relatively uniform base for comparing 1962 and 1978 wood products use factors. Construction expenditures for conservation and development projects in the United States, as reported by the Bureau of the Census are separated into (1) Federal and (2) State and local projects. Federal construction expenditures amount to about 80 percent of the total and development projects (table 1). Expenditures for construction of Federal conservation and development projects between 1958 and 1978 increased at an average annual rate of 7.6 percent in current dollars and 2.6 percent in constant (1972) dollars. (Author)

PB81-130320 PC **A03**/MF **A01**
National Timber Research Inst., Pretoria (South Africa).
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
Special rept.,
A. B. J. Du Plooy. Oct 79, 37p CSIR/SR/HOUT-179, ISBN-0-7988-1745-3

Pulpwood shortages can be reduced by using more of a pulpwood tree than has been done up to now. The object of this investigation was to compare the quantity and quality of Kraft pulp from South African grown hardwood whole trees with that from the stem only. This is achieved by quantifying the biomass and pulp properties of the separate tree components of E. grandis.

PB81-134181 PC **A03**/MF **A01**
Northeastern Forest Experiment Station, Broomall, PA.

SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
Forest Service research paper (Final),
Paul S. DeBald, and Joseph J. Mendel. 1976, 48p NEFES/81-152, FSRP-NE-338

The report presents 38 composite volume and value tables for hardwood pulpwood, with examples of how they can be applied to individual standing trees or to the pulpwood portions of sawtimber trees.

PB81-134298 PC **A02**/MF **A01**
Northeastern Forest Experiment Station, Broomall, PA.
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
Forest Service research paper (Final),
Donald G. Cuppett, and E. Paul Craft. 1975, 14p NEFES/81-146, FSRP-NE-328

The report is a guide for commercial application of low-temperature forced-air drying of Appalachian hardwood lumber. It provides (1) descriptions of dryer design and construction, (2) drying schedules and estimated drying times for different thicknesses of commercially important species, and (3) detailed instructions for dryer operation.

12.

MATHEMATICAL SCIENCES

12A. Mathematics and Statistics

AD-A091 907/6 PC **A02**/MF **A01**
Arizona Univ., Tucson.
Analytic Methods for the Approximate Solution of Singularly Perturbed Systems.
Technical rept.,
Robert E. O'Malley, Jr. Oct 80, 17p Rept no. 31
Contract N00014-76-C-0326
Presented at the Conference on Modeling of Chemical Reaction Systems, Heidelberg (Germany, F.R.), Sep 80.

This presentation surveys the singular perturbation technique for initial value problems for large systems of ordinary differential equations. A decoupling transformation to separate fast from slow modes of unforced systems is introduced, and approximations based on the singular perturbation methodology are developed. (Author)

AD-A091 946/4 PC **A02**/MF **A01**
Florida Univ., Gainesville.
Some Extensions of the Nerlove-Press Model.
Professional paper,
G. S. Maddala, and R. P. Trost. Oct 80, 24p CNA-PP-291
Grant NSF-SOC78-09473

In this paper we have reformulated the Nerlove-Press model in terms of an unobserved underlying variable with a continuous and three dummy indicators. In the example on agricultural practices of Phillippino farmers, the underlying variable is adoption of modern agricultural methods. Our basic problem is to study the determinants of this variable. In the case of the example on sexual attitudes of undergraduates at Northwestern University, the underlying variable is sexual permissiveness and our objective is to study the determinants of sexual permissiveness. Several models were estimated to study the determinants of the former latent variable using Mangahas' data that was used by Nerlove and Press. It was found that schooling, CO-OP and IRRIG were significant and positive and CROP was significant and negative and were the important determinants of 'adoption of modern agricultural methods.' The other explanatory variables were not significant. The results are encouraging since the schooling variable was not significant in the Nerlove-Press analysis. In their analysis only IRRIG, CO-OP and AREA were significant. It should, however, be admitted that the schooling variable, though statistically significant, had a very small coefficient and the experience variable was not significant. Thus, the results reported here are not substantially different from those of Nerlove and Press. The formulation adopted here should, however, prove useful in several other applications. The model we have estimated imposes a different and more readily interpretable structure on the data than that adopted by Nerlove and Press.

AD-A091 960/5 PC **A02**/MF **A01**
Pittsburgh Univ., PA. Inst. for Statistics and Applications.
Distributions of Some Matrix Variates and Latent Roots in Multivariate Behrens-Fisher Discriminant Analysis.
Interim rept.,
Yasuko Chikuse. Sep 80, 19p AFOSR-TR-80-1166
Contract F49620-79-C-0161

In this paper it is shown that some distribution of the matrix variates and latent roots arising in the multivariate Behrens-Fisher discriminant problem can be explicitly expressed in terms of the invariant polynomials with two matrix arguments, extending the zonal polynomials of matrix argument. (Author)

AD-A091 975/3 PC **A02**/MF **A01**
Brown Univ., Providence, RI. Lefschetz Center for Dynamical Systems.
Attractivity Properties of alpha-Contractions.
Interim rept.,
Paul Massatt. 12 Aug 80, 14p AFOSR-TR-80-1137
Contract DAAG29-79-C-0161, Grant AFOSR-76-3092

It is known that if T: X yields X is completely continuous where X is a Banach space, then point dissipative and compact dissipative are equivalent, and imply the existence of a maximal compact invariant set which is uniformly asymptotically stable and attracts bounded sets uniformly. If T is an alpha contraction it is not known whether point dissipative and compact dissipative are equivalent. However, T is compact dissipative, then there exists a maximal compact invariant set which is uniformly asymptotically stable and attracts neighborhoods of compact sets uniformly. Since, in practice, it is much easier to verify that a map is point dissipative rather than compact dissipative, it is desirable to say more about the limiting behavior when T is only assumed to be point dissipative. In this paper, we show, with the addition of only a few general assumptions, that point dissipative and compact dissipative are equivalent. The assumptions seem to be general enough to include almost all of the practical applications. Applications are given, or referenced, to stable neutral functional differential equations, retarded functional differential equations of infinite delay, and strongly damped nonlinear wave equations. (Author)

AD-A092 033/0 PC **A07**/MF **A01**
UKAEA, Harwell (England). Atomic Energy Research Establishment.
Harwell Subroutine Library. A Catalogue of Subroutines (1973),
M. J. Hopper. Jul 73, 140p Rept no. AERE-R-7477
Supersedes Rept. no. AERE-R-6912 dated 1971. See also Rept. no. AERE-R-7477-SUPPL-2, AD-A092 034.

This report contains a complete list of all the subroutines currently in the Harwell Subroutine Library and gives for each one a brief outline of purpose, method, origin, language and other attributes. Also included are contributions by members of the Numerical Analysis Group on topics of general interest to library users. One of these is on how to use the library and the others cover data fitting, optimization, linear algebra and quadrature. (Author)

AD-A092 034/8 PC **A02**/MF **A01**
UKAEA, Harwell (England). Atomic Energy Research Establishment.
Harwell Subroutine Library. A Catalogue of Subroutines (1973). Supplement Number 2.
Rept. for Aug 74-Jul 77,
M. J. Hopper. Aug 77, 14p Rept no. AERE-R-7477-SUPPL-2
Supplement 2 to report dated Jul 73, AD-A092 033.

This is a supplement to the Harwell Subroutine Library's catalogue R.7477 and gives a list of the subroutines introduced into the library in the period from August 1974 to July 1977. We have not included a general index to the library this time. The total list for the whole library is now covered by the report R.7477 and its two supplements (1974) and (1977) plus the deletion of the subroutines EB01A/AD, EB04A/AD, LA01A/AD, MC13A/C, OE01A/B, PA01A/AD, PA02A/AD, and TG01A/AD. Many of our new subroutines have been written with portability in mind and it is the intention of some of our authors to write code that conforms to the Fortran IV ANSI standard (1966). To do this we use the Bell Laboratories' verifier program, described in Ryder, 'The PFORT Verifier', Software Practice and Experience, 4, (1974), to check out the new subroutines. We have indicated those subroutines which have passed the verifier test by specifying the language as 'Fortran IV (standard)'. There are many other new subroutines that we are not flagged as verified which are virtually standard but have failed the test on some small point, e.g. OE02A is standard except for a single use of the IBM END=parameter in a READ statement, and in many cases a standard version can be obtained using OE04A to process the source deck and these we have marked '(standard available)'. Again, with portability in mind, we have begun to include Fortran versions of our machine language subroutines on the source tape and these we have flagged by specifying the language as 370/BAL (Fortran available). (Author)

AD-A092 052/0 PC **A02**/MF **A01**
California Univ., San Diego, La Jolla. Inst. of Geophysics and Planetary Physics.
The Second Painleve Transcendent: A Nonlinear Airy Function,
John W. Miles. 1980, 23p
Contract N00014-76-C-0025, Grant NSF-OCE74-23791
Pub. in Mechanics Today, v5 p297-313 1980.

No abstract available.

AD-A092 112/2 PC **A02**/MF **A01**
Army Science Board, Washington, DC.
1980 Summer Study on Statistical Techniques in Army Testing.
Final rept.,
Phil E. DePoy, Abraham Golub, Karen D. Pettigrew, William L. Root, and Victor K. T. Tang. Jul 80, 18p

This study examined statistical concepts underlying Army testing practices, with a view toward extracting high confidence based on generally fewer tests. (Author)

AD-A092 163/5 PC **A08**/MF **A01**
North Carolina Univ. at Chapel Hill. Inst. of Statistics.
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
Technical rept.,
M. R. Leadbetter, G. Lindgren, and H. Rootzen. Oct 80, 151p Rept no. MIMEO SER-1307
Contract N00014-75-C-0809
See also Part 1, AD-A069 561.

In this work we explore extremal and related theory for continuous parameter stationary processes. A general theory extending that for the sequence case, described in Chapter 2 of Part I, is obtained, based on dependence conditions closely related to those used there for sequences. In particular, a general form of Gnedenko's Theorem is proved for the maximum $M(T) = \sup (Xi(t); 0 < or = t < or = T)$, where Xi(t) is a stationary stochastic process satisfying appropriate regularity and dependence conditions. Cases where the process (Xi(t)) is normal are discussed in detail. Related topics include point process properties of upcrossings of levels, sample path properties at such upcrossings, location of extremes, maxima and minima for

two or more dependent processes, and properties of local extremes. (Author)

AD-A092 176/7 PC **A07**/MF **A01**
Houston Univ., TX. Dept. of Electrical Engineering.
Approximate Linear Regulator and Kalman Filter.
Final rept. 1 Jun 77-31 Aug 80,
Leang S. Shieh, and Willon B. Wai. 1 Sep 80, 150p ARO-14483.12M
Contract DAAG29-79-C-0178, Grant DAAG29-77-G-0143

Practical dynamic systems constantly face unpredictable fluctuations and disturbances for which Kalman filter has been shown to be effective in estimating the states from the outputs corrupted by white noises. This is the Kalman filtering problem. On the other hand, the Linear regulator problem, which is the mathematical dual of the Kalman filtering problem, plays an important role in modern optimal control theory. Both problems can be formulated as quadratic synthesis problems. A geometric-series approach is used to approximate the exponentials of Hamiltonian matrices for the quadratic synthesis problems. The approximants of the discretized transition matrices are then used to construct piecewise-constant gains and piecewise time-varying gains for approximating time-varying optimal gains and time-varying Kalman gains. Simple and fast algorithms are developed and can be easily implemented on a low cost minicomputer or microprocessor. The proposed methods have been successfully applied to the analysis of practical control systems.

AD-A092 184/1 PC **A02**/MF **A01**
Brown Univ., Providence, RI. Lefschetz Center for Dynamical Systems.
Approximation Techniques for Parameter Estimation in Hereditary Control Systems.
Interim rept.,
H. T. Banks, and I. G. Rosen. Sep 80, 15p AFOSR-TR-80-1116
Contract DAAG29-79-C-0161, Grant AFOSR-76-3092
Sponsored in part by Grant NSF-MCS79-05774-02.

Two types of approximation techniques for parameter estimation of delay systems are described and compared. One involves state discretization only while the other entails simultaneous state and time discretization. (Author)

AD-A092 185/8 PC **A03**/MF **A01**
Indiana Univ. at Bloomington. Dept. of Mathematics.
On Schur Optimality.
Interim rept.,
Gregory M. Constantine. Mar 80, 26p AFOSR-TR-80-1117
Grant AFOSR-76-3050

Schur-optimality is defined (in the general setting of a linear model) as a generalization of the well-known D-, A- and E-optimality criteria. Techniques to establish Schur-optimality are outlined, based chiefly on a process of averaging information matrices and on vector majorization. A design with a completely symmetric information matrix of maximal trace and exactly two distinct nonzero eigenvalues is proved Schur-better than a large class of designs. One description of a subcollection of designs over which Schur-optimality holds is given only in terms of the diagonal elements of the information matrices. Consequences of this are then examined in the setting on block designs. (Author)

AD-A092 187/4 PC **A02**/MF **A01**
Brown Univ., Providence, RI. Div. of Applied Mathematics.
Stochastic Control Under Partial Observations.
Interim rept.,
Wendell Fleming. 1980, 11p AFOSR-TR-80-1126
Grants AFOSR-76-3063, NSF-MCS79-03554
Pub. in Proceedings of the International Conference on Analysis and Optimization of Systems, INRIA (4th), Dec 80.

No abstract available.

AD-A092 188/2 PC **A03**/MF **A01**
Brown Univ., Providence, RI. Div. of Applied Mathematics.
Nonlinear Semigroup for Controlled Partially Observed Diffusions.
Interim rept.,
Wendell H. Fleming. 21 Aug 80, 40p AFOSR-TR-80-1136
Grants AFOSR-76-3063, NSF-MCS79-03554

In this paper a 'separated' control problem associated with controlled, partially observed diffusion processes is considered. The state in the separated problem is an unnormalized conditional distribution measure. The corresponding Nisio nonlinear semigroup associated with the separated problem is found. (Author)

AD-A092 190/8 PC **A02**/MF **A01**
Illinois Univ. at Chicago Circle. Dept. of Mathematics.
Construction of PBIB Designs with Triangular and L2 Schemes.
Interim rept.,
G. M. Constantine, and A. Hedayat. Sep 80, 13p AFOSR-TR-80-1155
Grant AFOSR-76-3050

Simple methods of construction lead to families of PBIB designs with triangular and L sub 2 schemes. The construction can be carried out in a s dimensions to obtain PBOB designs with at most s associate classes. A family of such PBIB designs (indexed by the block size) has the desirable statistical property that a pair of distinct varieties appears in at most one block. (Author)

AD-A092 191/6 PC **A03**/MF **A01**
Pittsburgh Univ., PA. Dept. of Mathematics and Statistics.
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
Interim rept.,
C. Fang, and P. R. Krishnaiah. Jul 80, 40p TR-80-11, AFOSR-TR-80-1164
Contract F49620-79-C-0161

In this paper, the authors derived asymptotic expressions for the joint densities of various functions of the noncentral real and complex Wishart matrices. Applications of the above results are also discussed in the area of reduction of dimensionality and testing for the structure of interaction in two-way classification with one observation per cell. (Author)

AD-A092 192/4 PC **A03**/MF **A01**
Pittsburgh Univ., PA. Dept. of Mathematics and Statistics.
Assessing Risks through the Determination of Rare Event Probabilities.
Interim rept.,
Allan R. Sampson, and Robert L. Smith. Jul 80, 47p TR-80-9, AFOSR-TR-80-1165
Contract F49620-79-C-0161

We consider the problem in risk assessment of evaluating the probability of occurrence of rare, but potentially catastrophic, events. The lack of historical data due to the sheer novelty of the event makes conventional statistical approaches inappropriate. The problem is compounded by the complex multivariate dependencies that may exist across potential event sites. In order to evaluate the likelihood of one or more such catastrophic events occuring, we provide an information theoretic model for merging a decision maker's opinion with expert judgment. Also provided is a methodology for the reconciling of conflicting expert judgments. This merging approach is invariant to the decision maker's viewpoint in the limiting case of exceptionally rare events. These methods are applied to case studies in likelihood assessment of Liquid Natural Gas tanker spills and seismic induced light water nuclear reactor meltdowns. (Author)

AD-A092 199/9 PC **A07**/MF **A01**
ORINCON Corp., La Jolla, CA.
Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
Final technical rept. 1 Feb 76-31 Jan 80,
Daniel L. Alspach, Vivek S. Samant, and Harold W. Sorenson. Jul 80, 135p OC-R-80-0002AB-1, AFOSR-TR-80-1157
Contract F44620-75-C-0023

This report summarizes research in problems of stabilization and control of nonlinear stochastic systems observed by noisy measurement data, and the difficulties encountered in processing this noise-contaminated measurement data to obtain accurate estimates of the states of the system. Such problems are inherent in many Air Force systems applications. If it is possible to estimate the state of the system accurately, then well-known classical deterministic control techniques may often be used to give adequate system performance. This approach will greatly reduce the complexity of the control algorithms over that required by the optimal policy. On the other hand the use of nonlinear filtering techniques in place of the simpler linearized filters can greatly increase the accuracy of the state estimates and thereby improve system performance and alleviate divergence problems.

AD-A092 221/1 PC **A05**/MF **A01**
Stanford Univ., CA. Dept. of Operations Research.
An Approach to Regenerative Simulation on a General State Space.
Technical rept.,
Peter W. Glynn. Jul 80, 79p Rept no. TR-53
Contract N00014-76-C-0578, Grant NSF-MCS79-09139

A wide variety of stochastic systems may be viewed as Markov chains taking on values in a general state space. An example is the class of generalized semi-Markov processes, which are commonly obtained in network queueing problems via the technique of supplementary variables. A simulator is often interested in obtaining steady state properties of such a system. Some recent developments in Markov chain theory by Athreya, Ney, and Nummelin allow one to embed a certain subclass of these processes in a regenerative environment. We study some consequences of this embedding and develop statistical estimation procedures for the general problem that bear close resemblance to the regenerative method of simulation analysis for finite state Markov chains. (Author)

AD-A092 248/4 PC **A03**/MF **A01**
Wisconsin Univ.-Madison. Mathematics Research Center.
A Population of Linear, Second Order, Elliptic Partial Differential Equations on Rectangular Domains. Part 1.
Technical summary rept.,
John R. Rice, Elias N. Houstis, and Wayne R. Dyksen. May 80, 48p Rept no. MRC-TSR-2078
Contracts DAAG29-75-C-0024, DAAG29-80-C-0041
See also Part 2, AD-A090 825. Sponsored in part by Grants NSF-MCS77-01408 and NSF-MCS79-01437.

We present a population of 56 linear, two-dimensional elliptic partial differential equations (PDEs) suitable for evaluating numerical methods and software. Forty two of the PDEs are parameterized which allows much larger populations to be made; 189 specific cases are presented here along with solutions (some are only approximate). Many of the PDEs are artificially created so as to exhibit various mathematical behaviors of interest; the others are taken from real world problems in various ways. The population has been structured by introducing measures of complexity of the operator, boundary conditions, solution, and problem. The PDEs are first presented in mathematical terms along with contour plots of the 189 specific solutions. Machine readable descriptions are given in Part 2, MRC Technical Summary Report no. 2079; many of the PDEs involve lengthy expressions and about a dozen involve extensive tabulations of approximate solutions. (Author)

AD-A092 254/2 PC **A02**/MF **A01**
George Washington Univ., Washington, DC. Inst for Management Science and Engineering.
Convergence Theory for Unconstrained Minimization,
Garth P. McCormick. 30 Sep 80, 20p Rept no. SERIAL-T-431
Contracts DAAG29-79-C-0062, N00014-75-C-0729

Convergence theory for unconstrained minimization centers on proving which characteristics hold at point of accumulation of minimizing sequences generated by unconstrained minimization algorithms. To a great extent, convergence proofs for particular algorithms have common elements. In this paper some results have been synthesized and put in a general context. Some applications of the theory are included. (Author)

AD-A092 256/7 PC **A02**/MF **A01**
Stanford Univ., CA. Dept. of Computer Science.
Semiantichains and Unichain Coverings in Direct Products of Partial Orders.
Technical rept.,
Douglas B. West, and Craig A. Tovey. Sep 80, 23p Rept no. STAN-CS-80-821
Contract N00014-76-C-0688, Grant NSF-MCS77-23738

We conjecture a generalization of Dilworth's theorem to direct products of partial orders. In particular, we conjecture that the largest 'semiantichain' and the smallest 'unichain covering' have the same size. We consider a special class of semiantichains and unichain coverings and determine when equality holds for them. This conjecture implies the existence of k-saturated partitions. A stronger conjecture, for which we also prove a special case, implies the Greene-Kleitman result on simultaneous k and (k+1)-saturated partitions. (Author)

AD-A092 261/7 PC **A02**/MF **A01**
Rochester Inst. of Tech., NY. Dept. of Electrical Engineering.
Some Mathematical Considerations in Dealing with the Inverse Problem.
Technical rept.,
Tapan K. Sarkar, Donald D. Weiner, and Vijay K. Jain. Apr 80, 20p Rept nos. TR-80-3, TR-2
Contract N00014-79-C-0598
Prepared in cooperation with Syracuse Univ., NY. Dept. of Electrical Engineering, and University of South Florida, Tampa. Dept. of Electrical Engineering.

Many problems of mathematical physics can be formulated in terms of the operator equation Ax = y, where A is an integro-differential operator. Given A and x, the solution for y is usually straightforward. However, the inverse problem which consists of the solution for x when given A and y, is much more difficult. In this paper the following questions relative to the inverse problem are explored: (1) Does specification of the operator A determine the set (y) for which a solution x is possible* (2) Does the inverse problem always have a unique solution* (3) Do small perturbations of the forcing function y always result in small perturbations of the solution* (4) What are some of the considerations that enter into the choice of a solution technique for a specific problem* The concept of an ill-posed problem versus that of a well-posed problem is discussed. Specifically, the manner by which an ill-posed problem may be regularized to a well-posed problem is presented. The concepts are illustrated by several examples. (Author)

AD-A092 349/0 PC **A03**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
Technical rept.,
Kali S. Banerjee. Sep 80, 31p ARBRL-TR-02269, AD-E430 543

While reviewing some of the implications of a small sample in a sensitivity experiment analyzed by the maximum likelihood estimation procedure under the cumulative normal response, this report provides a measure of efficiency of the experiment as a whole with reference to the estimation of mu and sigma. Such a measure of efficiency provides a perspective for a new look into the existing results as well as a direction for future planning. A design is suggested indicating the levels at which the observations have to be taken to maximize the efficiency of estimation.

AD-A092 386/2 PC **A02**/MF **A01**
Maryland Univ. Baltimore County, Baltimore. Dept. of Mathematics.
Detection, Estimation, and Control on Group Manifolds.
Final scientific rept. 1 Jul 79-31 Jul 80,
James T. Lo. 31 Jul 80, 10p AFOSR-TR-80-1055
Contract F49620-79-C-0186

An optimal estimation scheme for continuous-time rotational processes with one degree of freedom was obtained. The estimation problem for continuous-time rotational processes with three degress of freedom turns out to be rather difficult. Many attempts were made by the principal investigation in the past few years on the problem. While these attempts produced minimal results, many crucial issues have been placed in perspective. Because of the theoretical and practical importance of the problem, a concentrated effort was finally made during the report period to study these issues.

AD-A092 388/8 PC **A03**/MF **A01**
Kentucky Univ., Lexington. Dept. of Mathematics.
State Space Models for Gaussian Stochastic Processes.
Interim rept.,
Anders Lindquist, and Giorgio Picci. 5 Jul 80, 38p AFOSR-TR-80-1182
Grants AFOSR-78-3519, NSF-ECS79-03731
Proceedings of the NATO-ASI Workshop, Les Arcs, France, 22 Jun-5 Jul 80.

A comprehensive theory of stochastic realization for multivariate stationary Gaussian processes is presented. It is coordinate-free in nature, starting out with an abstract state space theory in Hilbert space, based on the concept of splitting subspace. These results are then carried over to the spectral domain and described in terms of Hardy functons. Each state space in uniquely characterized by its structural function, an inner function which contains all the systems theoretical characteristics of the corresponding realizations. Finally coordinates are introduced and concrete differential-equation-type representations are obtained. This paper is an abridged version of a forthcoming paper, which in turn summarizes and considerably extends results which have previously been presented in a series of preliminary conference papers. (Author)

AD-A092 389/6 PC **A02**/MF **A01**
Northwestern Univ., Evanston, IL. Dept. of Mechanical Engineering.
Optimal Control of Systems with Uncertainty.
Final technical rept. 1 Sep 75-31 Aug 80,
W. E. Schmitendorf. 31 Aug 80, 15p AFOSR-TR-80-1183
Grant AFOSR-76-2923

The research supported by AFOSR Grant 76-2923 has led to some significant results which can be used in the design of optimal controllers when disturbances are present. Sufficient conditions which a minmax control must satisfy were developed for systems with disturbances in the state equation or in the measurement of the initial state. From these conditions, constructive techniques were developed which can be used to generate minmax controllers. The second major area of the research was controllability problems. Criteria for determining the controllability properties of constrained systems were derived. The criteria involve finite dimensional optimization problems and are amenable to computer implementation. (Author)

AD-A092 430/8 PC **A02**/MF **A01**
School of Aerospace Medicine, Brooks AFB, TX.
The Effect of Errors in Diagnosis and Measurement on the Estimation of the Probability of an Event,
Joel E. Michalek, and Ram C. Tripathi. Jan 79, 10p Rept no. SAM-TR-79-296
Pub. in Jnl. of the American Statistical Association, v75 n371 p713-721 Sep 80.

No abstract available.

AD-A092 461/3 PC **A03**/MF **A01**
Defense Mapping Agency Hydrographic/Topographic Center, Washington, DC.
Simple Algorithms for Calculation of Scale Factors for Plan Coordinate Systems (1927 NAD and 1983 NAD),
Herbert W. Stoughton. Oct 80, 49p

This paper presents a hand-held calculator algorithm to compute scale factors for state plane coordinate systems. A second algorithm is presented for digital computers. The algorithms are applicable to any figure of the earth, but this paper addresses Clarke 1866 (NAD 1927) and NAD 1983. (Author)

AD-A092 495/1 Not available NTIS
Wisconsin Univ.-Madison. Dept. of Mathematics.
Nonlinearly Perturbed Volterra Equations,
Jacob J. Levin. 13 Aug 79, 21p ARO-14035.41-M
Grant DAAG29-77-G-0004
Availability: Pub. in Tohoku Mathematical Jnl., v32 n2 p317-335 Jun 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-B021 970/9 PC **A02**/MF **A01**
Air Force Armament Lab., Eglin AFB, FL.
Generating Weather Data for Linear Weapons Allocation Models.
Final rept. Jan-Jun 75,
James V. Blowers. Jun 75, 22p Rept no. AFATL-TR-75-86
Distribution limitation now removed.

Some weapons allocation models that use linear programming techniques have a capability of taking weather into account. These models require as input the probability that the weather at a given location and a given time is within given limits, usually determined by launch envelopes of weapon systems. This report shows one way in which raw data provided by the Air Weather Service can be converted into a form useable by these models. (Author)

LA-8468-T PC **A04**/MF **A01**
Los Alamos Scientific Lab., NM.
Abstract Model of the Finite Element Method.
I. Y. Bucher. Aug 80, 73p
Contract W-7405-ENG-36
Thesis.

A model of the finite element method is developed in which trial functions, test functions, and solutions are not viewed in the usual way as single functions over the entire domain of a problem but as Cartesian products of functions, each defined on one element domain. This approach leads to conceptual simplifications as well as to new ways of computing stiffness matrices. Applications of the model to several common forms of the finite element method, mesh refinement, and substructure assembly techniques are discussed. 10 figures, 6 tables. (ERA citation 06:001779)

PB81-126179 Not available NTIS
National Bureau of Standards, Washington, DC.
Internal Configurations of Span-Constrained Random Walks,
G. H. Weiss, and R. J. Rubin. 1980, 13p
Pub. in Jnl. Statistical Physics 22, n1 p97-109 1980.

The spans of a random walk on a simple cubic lattice are the sides of the smallest rectangular box with sides parallel to the coordinate axes that entirely contain the random walk. The authors consider the position, at dimensionless time tau, of a random walker constrained by a set of spans S. It is shown in one dimension that if S squared is much $>$ 4 tau, the random walker tends to be located at the extremities of the span, while in the contrary case the random walker is most likely to be found halfway between the extremities. This is true whether the single-step transition probabilities have a finite or an infinite variance, as is shown by example. In higher dimensions, the position of the random walker in the direction of the largest span tends to lie at the span extremities, while the position in the direction of the smallest span tends to be in the middle.

PB81-132854 PC **A03**/MF **A01**
Loughborough Univ. of Technology (England). Dept. of Mathematics.
A Non-Parametric Approach to the Change-Point Problem,
A. N. Pettitt. Jan 78, 27p MATH-RES-123

Non-parametric techniques are introduced for the change-point problem. Exact and approximate re-

sults are obtained for testing the null hypothesis of no change. The methods are illustrated by the analysis of three sets of data.

12B. Operations Research

AD-A091 989/4 PC **A02**/MF **A01**
Michigan Univ., Ann Arbor. Computer, Information and Control Engineering.
Final Technical Report, 15 September 1975-14 July 1980,
Frederick J. Beutler. Oct 80, 5p AFOSR-TR-80-1152
Grant AFOSR-76-2903

Since its inception, the subject Grant has been largely concerned with investigations on Markov queueing networks; even though the Markov property provides a powerful analytical tool, many of the fundamental parameters--e.g., customer streams, waiting times, transient behavior, sojourn times--were poorly understood. Jackson networks, which perhaps constitute the simplest kind of queueing system, were considered first. Results on conditions for line length equilibrium, and related service times and number of service per customer were soon obtained. It was noted that the line length vector describing the Markov system could be augmented to incorporate generalized forms of traffic counts. This led to studies on and identification of Poisson traffic flows on broad classes of queueing networks.

AD-A092 259/1 PC **A11**/MF **A01**
Decisions and Designs, Inc., McLean, VA.
A Manual for Encoding Probability Distributions.
Final rept.,
Cari-Axel S. Stael von Holstein, and James E. Matheson. Sep 78, 226p
Contract N00014-78-C-0100
Prepared in cooperation with SRI International, Menlo Park, CA.

Accounting for the uncertainty in most decision problems requires the application of the knowledge of one or more experts. In decision analysis, a process of probability encoding is used to convert specialized or general knowledge into probability distributions to represent the judgement of these experts. This manual presents the probability encoding methods that have proved to be most effective in providing a precise language for communication about uncertainty. The interview process described herein has been found to be an efficient method for eliciting the uncertainty in a person's information. The manual details the careful interaction between the interviewer (decision analyst) and the subject whose judgment is encoded. The encoding process not only provides the user with an awareness of the many problems that may arise in an encoding situation, but also improves the subject's awareness of his state of information. (Author)

AD-A092 278/1 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Exchange Service Station Gasoline Pumping Operation Simulation.
Master's thesis,
James Francis Henn. Jun 80, 132p

This thesis presents an event step simulation model of the Naval Postgraduate School Exchange Service Station gasoline pumping operation. The model has been developed as a management tool and aid to decision making. The environment in which the system operates is discussed and the significant variables which can and cannot be controlled by management are identified. Data includes information pertaining to arrival rates, service times and ratios of vehicles requiring different gasoline grades. The data are analyzed through parametric and nonparametric statistical techniques to develop the appropriate distributions to be used for random sampling during simulation. The assumptions made during model development are thoroughly discussed. Conclusions and recommendations concerning the model and its use are made based on assumptions and the data, and statistical analysis thereof. (Author)

AD-A092 435/7 PC **A11**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
A Composite Algorithm for Mixed Integer Constrained Nonlinear Optimization.
Doctoral thesis,
Daniel B. Fox. Jan 80, 234p Rept no. AFIT-CI-80-1D

A composite optimization algorithm applicable to mixed integer, constrained, nonlinear problems is developed in this research. One major component of the composite algorithm is a modified version of the nonlinear simplex method. Significant modifications are made to this algorithm including the incorporation of a unidimensional search procedure and the use of a new method to treat constraints. Additional features of the composite algorithm include new acceleration strategies, a new decomposition approach, and a discrete grid algorithm. The components of the composite algorithm are tested on problems primarily selected to represent engineering design optimization applications. The performance of the new methods is compared to some existing techniques. Examples of the application of combinations of the composite components are included. The results indicate that the new algorithms obtain superior solutions and in most cases are more efficient than existing techniques.

AD-A092 499/3 PC **A03**/MF **A01**
Decisions and Designs, Inc., McLean, VA.
Game Theory, Decision Theory, and Social Choice Theory in the Context of a New Theory of Equity.
Final rept.,
Horace W. Brock. Dec 78, 44p
Contract N00014-78-C-0100
Prepared in cooperation with SRI International, Menlo Park, CA.

Some of thee interrelationships between game theory, axiomatic social choice theory, and ethics are set forth in the context of a new theory of equity. One of the principal functions of the new theory is to explicate alternative intuitive concepts of equity such as 'To Each According to His Needs,' and 'To Each According to His Contribution.' Game theoretic methods are used not only to provide an unambiguous, analytical characterization of these (and other) concepts, but also to integrate the various concepts within a single, coherent account of equity. In Section II, the reader is furnished with an overview of the Basic structure of the theory. In Section III, the subtheory of distribution according to relative needs is developed. Here attention is drawn to the mathematical equivalence of the ethical model developed in this theory with the Nash-Harsanyi theory of pure n-person bargaining games and with the Kaneko-Nakamura version of axiomatic social choice theory. In Section IV, the subtheory of distribution according to relative contribution is discussed. And Section V presents an informal characterization of a two-stage game, which when played, will realize 'full distributive justice' as understood in the new theory.

AD-904 407/4 PC **A03**/MF **A01**
Army Materiel Systems Analysis Activity, Aberdeen Proving Ground, MD.
The Delphi Technique and ITS Applicability to Army Systems Analyses.
Technical memo.,
Lambert J. Sebastiani. Jun 72, 35p Rept no. AMSAA-TM-127
Distribution limitation now removed.

Delphi is a normative technique for solving problems that involve uncertainty. It employs well-structured, objective procedures for the elicitation of expert judgment. This report presents a brief description of the Delphi technique and an orientation to its features and methods. It evaluates the research which has been done to validate Delphi, and discusses the problems associated with its application to Army systems analysis. Normative techniques are still an art and must be applied with caution. The analysts must be experienced and knowledgeable. These techniques should not replace analytical methods, but may be gainfully employed where uncertainty prevails and good judgment is necessary. (Author)

13. MECHANICAL, INDUSTRIAL, CIVIL, AND MARINE ENGINEERING

13A. Air Conditioning, Heating, Lighting, and Ventilating

AD-A091 929/0 PC **A04**/MF **A01**
Data Signal Corp., Watertown, MA.
Local Energy Monitoring and Control Analysis.
Final rept.,
Clarence L. Walker, Jr. 28 Aug 80, 67p
USAFESA-TS-2063
Contract DAAK70-78-C-0186

This report is an overview and analysis of currently available energy management control devices for small buildings 200,000 sq ft or less. It discusses the applications of hardware and economics considerations requisite to installing control devices local to a building's mechanical system. It further discusses methods for measuring a project's economic feasibility relative to both retrofit and new construction. (Author)

AD-A092 060/3 PC **A02**/MF **A01**
Army Facilities Engineering Support Agency, Fort Belvoir, VA. Technology Support Div.
Laundry Heat Recovery, USMA, West Point.
Final rept.,
Stephen L. Jones. 8 Sep 80, 20p Rept no. USAFESA-TS-2087

The purpose of this report is to determine the feasibility of retrofitting heat recovery devices to commercial size clothes dryers. Data used in the analysis was provided by the Energenics Corporation, Aurora, IL and the Energy Conservation Office, US Military Academy, West Point. (Author)

AD-A092 436/5 PC **A07**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Environmental Influences in the Simulation of a Solar Space Heating System.
Master's thesis,
Douglas M. Brooks. 1980, 127p Rept no. AFIT-CI-80-20T

The objective of this thesis was to determine whether hourly departures in building heat loss given by a simplified degree day approach has a significant effect on the selection of an optimum collector size for the solar system. A numerical model was to do simulation studies. Using the results from this simulation an optimum collector size was determined from the energy requirements given by each model and a comparison made between the simulations and the degree day approaches. (Author)

AD-B007 816/2 PC **A09**/MF **A01**
Little (Arthur D.), Inc., Cambridge, MA.
Development of a Temperature Controller for a Vuilleumier (VM) Cycle Power Cylinder.
Final rept. 1 Sep 74-1 Oct 75,
Richard H. Spencer. Oct 75, 188p AFFDL-TR-75-99
Contract F33615-75-C-3002
Distribution limitation now removed.

Development of a temperature controller for the hot end of a Vuilleumier (VM) cryogenic cooler system is presented. The objectives of a low-cost,

moderate reliability, environmentally tested controller are met in the design presented. Fundamental design factors include: use of an on/off controller operating from the 28-volt aircraft bus, use of a platinum resistance temperature sensor, packaging within 25 cubic inches, use of class P components, and an estimated mean-time-between-failure of more than 8000 hours.

AD-871 914/8 PC **A09**/MF **A01**
Philco-Ford Corp Palo Alto Calif Space and Re-Entry Systems Div
Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
Technical rept.,
Richard H. Hulett, Werner F. Schmidt, Robert A. Wiedeman, and Carl A. Zierman. Jun 70, 182p
AFFDL-TR-69-122
Contract F33615-69-C-1715
Distribution limitation now removed.

A thermal analysis and design study of passive radiative infrared detector coolers capable of operating in outer space has been completed. The objective of the program was to study the feasibility of and to develop design techniques for coolers capable of reaching operating temperatures of 138R and below. The spacecraft carrying the detection system was assumed to be orbiting the earth and was exposed to solar and planetary heat fluxes. The cooler rejects heat to the outer space heat sink and provides the proper detector cooling solely by thermal radiation. Thermal analyses were performed on candidate cooler design concepts in three particular earth orbits. Detailed thermal analyses and design of an experimental cryogenic radiator, applicable for use in an earth oriented 200 nautical mile circular orbit in the plane of the ecliptic, were completed. Thermal analyses predict an orbital temperature of 146R for this radiator. Design drawings were generated for fabrication of an experimental cooler model. A test plan for verification of the thermal and structural performance of the experimental model was written. (Author)

AD-902 944/8 PC **A04**/MF **A01**
Philips Labs., Briarcliff Manor, NY.
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
Interim technical rept. no. 2, 1 Oct 71-1 Jun 72,
Gerald K. Pitcher. Jul 72, 66p PL-26-CR72-0809, AFFDL-TR-71-147-Pt-2
Contract F33615-71-C-1024
Distribution limitation now removed.

The design layout of the refrigerator was completed during this period. The detail design is 90% complete; fabrication is 30% complete. A significant effort was made to reduce the weight of the refrigerator while not impairing the reliability and high efficiency sought. Tests on life-limiting components were continued. Pertaining to the refrigerator electronics, the following has been established: the system for controlling the temperature of the hot cylinder was selected; the motor control circuitry is being fabricated; the signal conditioning circuitry was designed. Studies were conducted on gas and fluid retention in magnesium materials. A developmental model of the pressure difference regulator for the rolling seals was built; results were satisfactory. A suitable elastomeric material was selected for the oil-helium separator. (Author)

AD-907 360/2 PC **A06**/MF **A01**
Little (Arthur D.), Inc., Cambridge, MA.
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
Interim technical rept. no. 1, 1 Nov 71-1 May 72,
R. W. Breckenridge, Jr., J. L. Coggins, T. P. Heuchling, W. P. Hidden, and J. E. McCullough. Jul 72, 123p ADL-C-74100-1, AFFDL-TR-72-88
Contract F33615-72-C-1281
Distribution limitation now removed.

This interim technical report covers the work carried out during the first six months of an Advanced Development Program to develop a highly reliable rotary-reciprocating refrigerator suitable for long-term spaceborne applications. The equipment is to produce 1.5 watts of refrigeration at 12 K and 40 watts of refrigeration at 60 K while requiring less than 2500 watts of input power. It utilizes the reversed Brayton cycle and employs rotary-reciprocating compressors and expansion engines. Under the development program, a prototype refrigerator is to be designed, fabricated, and subjected to an intensive test program culminating in a 5000-hour continuous endurance run. The refrigerator consists of a compressor assembly (containing the compressors and aftercooler), an expander assembly (containing the expansion engines, the drive mechanism, and all cold-end components), and electronic power conditioning equipment to drive and control the compressor and expander pistons. This report discusses the selection of the thermodynamic cycle for the refrigerator and describes the design of the compressor assembly, the expander assembly, and the power conditioning equipment. Experimental results from tests with the first- and second-generation power conditioning equipment are presented. The calculated overall characteristics of the refrigerator (size, weight, power, etc) are summarized, and system operation is discussed. (Author)

ALO-35356-2 PC **A10**/MF **A01**
Monsanto Research Corp., Dayton, OH. Dayton Lab.
Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
L. Parts, D. R. Miller, J. W. Leffingwell, and Q. E. Thompson. Sep 80, 210p
Contract AC04-78CS35356

The major objective of this program was the identification of superior, currently available organic heat transfer fluids for solar collector applications. Organic fluids used in the form of aqueous solutions were also to be identified. The required design and handling properties of the fluids were determined through a survey in which 115 designers and manufacturers of solar collectors and collection systems participated. A state-of-the-art survey of commercially available organic heat transfer fluids provided information on fifty fluids. These were grouped into nine classes. This report contains information on limiting, design, and handling properties of these fluids. The limiting properties affix the use temperature ranges of the fluids. The design properties include the following thermophysical data: densities, vapor pressures, viscosities, specific heats, thermal conductivities, heats of vaporization, and coefficients of thermal expansion. The handling properties include: compatibility and incompatibility, with construction materials, chemical sensitivity, ignitability, physiological effects, and biodegradability characteristics. Mutagenicity tests with Salmonella typhimurium bacteria, and ignitability tests were conducted with a number of fluids in this program. The properties of the fluids were analyzed with reference to the required design and handling properties established in the survey of collector manufacturers. Guidelines are provided for the selection of superior fluids to meet specific collector operational and compatibility requirements. These guidelines include the use of heat transfer efficiency factors, that were calculated or the temperature ranges for which thermophysical data were available. (ERA citation 06:000511)

BN-SA-1064 PC **A03**/MF **A01**
Battelle Pacific Northwest Labs., Richland, WA.
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
B. M. Johnson, F. R. Zaloudek, H. D. Fricke, R. G. Helenbrook, and J. A. Bartz. 1980, 42p
CONF-800989-1
Contract AC06-76RL01830
International Association of Hydraulic Research cooling tower workshop, San Francisco, CA, USA, 21 Sep 1980.

Recognizing the need to conserve water in power plant cooling, several programs have been undertaken to study the performance and economics of dry cooling systems. The goals of these programs for improved dry cooling system design, new processes for combined wet/dry cooling, cost savings for advanced all-day cooling systems, and plans for testing materials and components of air cooled systems are discussed. (ERA citation 06:000691)

DOE/CS-0099-D PC **A08**/MF **A01**
Department of Energy, Washington, DC. Div. of Buildings and Community Systems.
Air Infiltration in Buildings: International Energy Agency (IEA). Draft Program Plan.
Oct 79, 164p

An international program plan for applied research and development in the field of air infiltration is presented that significantly reduces the possibility of a recurrence of research planning problems such as duplication of effort, concurrent yet inconclusive findings, uninvestigated problem areas, and generally a lack of communication across national lines. Eight authors from five countries have contributed chapters of the program plan. It is expected that building energy losses due to air infiltration will be substantially reduced at the completion of the twelve recommended projects. (ERA citation 06:000936)

DOE/CS/30122-4 PC **A10**/MF **A01**
Colorado State Univ., Fort Collins. Solar Energy Applications Lab.
Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
S. Karaki, T. E. Brisbane, S. S. Waterbury, and T. G. Lantz. Jan 80, 222p
Contract AC02-79CS30122

The solar heating system in Solar House II, evaluated during the heating season of 1978-1979, consists of 57.9 m exp 2 of Solaron Series 3000 Collectors, 10.3 m exp 3 of pebble bed storage, domestic water preheating capability and a Carrier air-to-air heat pump as an auxiliary heater. Although the control subsystem was specially constructed to facilitate experimental changes and data reduction, the balance of the solar system was assembled with off-the-shelf components. Descriptions of the building and the system, modes of system operation, the data acquisition system, data processing, and performance - thermal, collector, storage, and heat pump - are included. (ERA citation 06:000514)

DOE/NASA/CR-161550 PC **A05**/MF **A01**
Security State Bank, Starkville, MS.
Solar Heating System at Security State Bank, Starkville, Mississippi. Final Report.
Aug 80, 95p
Contract FC01-78CS35198

Information is provided on the Solar Energy Heating System (airtype) installed at the branch bank building, northwest corner of Highway 12 and Spring Street, Starkville, Mississippi. This installation was completed in June, 1979. The 312 square feet of Solaron flat plate air collectors provide for 788 square feet of space heating, an estimated 55 percent of the heating load. Solar heated air is distributed to the 96 cubic foot steel cylinder, which contains two inch diameter rocks. An air handler unit moves the air over the collector and into the steel cylinder. Four motorized dampers and two gravity dampers are also part of the system. A Solaron controller which has sensors located at the collectors, rock storage, and at the return air, automatically controls the system. Auxiliary heating energy is provided by electric resistance duct heaters. This project is part of the US Department of Energy's Solar Demonstration Program with the government sharing $14,201 of the $17,498 solar energy system installation cost. This system was acceptance tested February, 1980, and the demonstration period ends in 1985. (ERA citation 06:000518)

DOE/TIC-11293 PC **A02**/MF **A01**
Los Alamos Scientific Lab., NM.
Ceramic Heat Pipe Development. Quarterly Report, April 1, 1980-June 30, 1980.
M. Merrigan. Sep 80, 10p
Contract W-7405-ENG-36

Progress in research on ceramic heat pipes to be used in high temperature environments such as fluidized coal beds or process furnace flue gases is reported. The procurement of ceramic tubes such as graphite-core SiC CVD-coated tubes with CVD tungsten liners and CNTD-coated Mo tubes is progressing. Materials compatibility studies continued. Economic evaluations were made. Test facili-

ties have been designed and are being fabricated. (ERA citation 06:001173)

PB81-135642 PC **A03**/MF **A01**
National Bureau of Standards, Washington, DC. National Engineering Lab.
A 'Reference Building' Approach to Building Energy Performance Standards for Single-Family Residences.
Final rept.,
Stephen R. Petersen, and Jim L. Heldenbrand.
Oct 80, 40p NBSIR-80-2161
Sponsored in part by Department of Energy, Washington, DC.

A reference building approach to building energy performance standards (BEPS) is described in this report which could serve as a framework for the further development of energy standards for new single-family residences. Each proposed new building design would be compared with a reference building design and operating profile. In order to comply with the standard, the design energy requirements of the new building would not be allowed to exceed those of the reference building, when evaluated by a parallel modeling process.

PB81-851032 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Heat Exchangers for Space Heating. January, 1976-September, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Sep 80,
John H. Frey. Sep 80, 128p NERACEDBNT1840
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the applications of various types of heat exchangers found in many types of heating systems to the heating of both domestic and commercial space. (Contains 128 citations.)

SOLAR/1029-80/14 PC **A05**/MF **A01**
Automation Industries, Inc., Silver Spring, MD. Vitro Labs. Div.
Solar Energy System Performance Evaluation, Design Construction, Bigfork, Montana, October 1979-April 1980.
M. L. Brauch. 1980, 84p
Contract AC01-79CS30027

The Design Construction site is a single-family residence in Bigfork, Montana equipped with an active solar energy system. The solar energy system consists of an array of 792 square feet of Revere, Sun Roof flat-plate, liquid (water draindown) collectors and a 1400 gallon water storage tank located centrally on the first floor. Heat from the storage tank is transported to a 65 gallon DHW heater equipped with an auxiliary electric heating element. Hot water from the storage tank also passes through an auxiliary eiectric boiler and then through a four zone baseboard radiator system to provide space heating for the home. There is also a special hydro-heater fireplace built into the side of the storage tank which is used as an auxiliary. The Design Construction solar energy system supplied 35% of the space heating and 27% of the domestic hot water required for this house during the heating season of October 1979 through April 1980. The quantity of collected solar energy that was used was 81% and the collector array efficiency was 28%. (This efficiency is based on the total solar radiation incident on the array.) Solar energy saved 7415 kwh of electricity for the seven-month period. The solar energy system functioned consistently throughout the heating season providing significant amounts of solar energy to the space heating and DHW subsystems. The solar fraction of 35% was somewhat lower than the design goal of 50%. The main reason for this was that the insolation was well below the long-term average for this period (October 1979 through April 1980). (ERA citation 06:000528)

13B. Civil Engineering

AD-A091 893/8 PC **A02**/MF **A01**
Propellants, Explosives and Rocket Motor Establishment, Westcott (England).
Production of Nitrous Oxide in a Rocket Motor Exhaust.
Memorandum rept.,
D. E. Jensen. Aug 80, 18p PERME-MEMO-96, DRIC-BR-75265

Predictions are made of concentrations of N2O produced within the exhaust of a double-base propellant rocket motor. Typical concentrations produced are predicted to be between 10 to the 12th power and 10 to the 13th power molecule/ml, some five orders of magnitude below those of CO2 and lower than the characteristics atmospheric level of about 1.3 x 10 to the 13th power molecule/ml.

AD-A091 976/1 PC **A06**/MF **A01**
Colorado School of Mines, Golden.
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
Final rept.,
George B. Clark, Levent Ozdemir, and Fun-Den Wang. Aug 80, 116p AFWL-TR-79-120-VOL-1-1, AD-E200 579
Contract F29601-78-C-0056
See also Volume 1, part 2, AD-A092 012.

Technical feasibility and cost studies were made for a deep-based missile (DBM) tunnel system (Mesa concept) by means of tunnel boring machines (TBMs), along with designing an egress machine for post-attack tunneling through approximately 2,500 feet of probably unstable rock to the rubble zone. Currently, available designs of TBMs are readily adaptable for the conventional excavation in geologic environment considered suitable for DBM siting. Most, if not all, of the tunnel sections in the rocks of anticipated structure and strength will require support varying from simple rock bolting to concrete segments. Current (1979) costs for similar tunnels (Chicago) vary from $600 to $800 per linear foot of tunnel, while the estimated costs for the DBM tunnels average as high as $1,600 per foot because of the greater depths, weaker rock, longer tunnels, possible remoteness geographically, and other related factors. Two concepts for egress machines have been proposed by the Robbins and Jarva companies. The details of use of geotechnical data are given in Appendix A and were qualitatively for estimates of support requirements and costs. The only calculation that could be made based upon available data was the assumption that squeezing ground would occur if the stress concentration at the ribs of the tunnels exceeds the unconfined compressive strength. Average conditions assumed for the tunnel calculations in the COSTUN program automatically include the effects of rock quality designation (RQD), etc.

AD-A092 012/4 PC **A05**/MF **A01**
Colorado School of Mines, Golden.
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
Final rept.,
George B. Clark, Levent Ozdemir, and Fun-Den Wang. Aug 80, 90p AFWL-TR-79-120-VOL-1-2, AD-E200 580
Contract F29601-78-C-0056
See also Volume 1, Part 1, AD-A091 976.

Technical feasibility and cost studies were made for a deep-based missile (DBM) tunnel system (Mesa concept) by means of tunnel boring machines (TBMs), along with designing an egress machine for post-attack tunneling through approximately 2,500 feet of probably unstable rock to the rubble zone. Currently, available designs of TBMs are readily adaptable for the conventional excavation in geologic environment considered suitable for DBM siting. Most, if not all, of the tunnel sections in the rocks of anticipated structure and strength will require support varying from simple rock bolting to concrete segments. Current (1979) costs for similar tunnels (Chicago) vary from $600 to $800 per linear foot of tunnel, while the estimated costs for the DBM tunnels average as high as $1,600 per foot because of the greater depths, weaker rock, longer tunnels, possible remoteness geographically, and other related factors. Two concepts for egress machines have been proposed by the Robbins and Jarva companies. The details of use of geotechnical data are given in Appendix A and were qualitatively for estimates of support requirements and costs. The only calculation that could be made based upon available data was the assumption that squeezing ground would occur if the stress concentration at the ribs of the tunnels exceeds the unconfined compressive strength. Average conditions assumed for the tunnel calculations in the COSTUN program automatically include the effects of rock quality designation (RQD), etc.

AD-A092 013/2 PC **A06**/MF **A01**
Colorado School of Mines, Golden.
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
Final rept.,
George B. Clark, Levent Ozdemir, and Fun-Den Wang. Aug 80, 119p AFWL-TR-79-120-VOL-2, AD-E200 581
Contract F29601-78-C-0056
See also Volume 1, Part 2, AD-A092 012.

Technical feasibility and cost studies were made for a deep-based missile (DBM) tunnel system (Mesa concept) by means of tunnel boring machines (TBMs), along with designing an egress machine for post-attack tunneling through approximately 2,500 feet of probably unstable rock to the rubble zone. Currently, available designs of TBMs are readily adaptable for the conventional excavation in geologic environment considered suitable for DBM siting. Most, if not all, of the tunnel sections in the rocks of anticipated structure and strength will require support varying from simple rock bolting to concrete segments. Current (1979) costs for similar tunnels (Chicago) vary from $600 to $800 per linear foot of tunnel, while the estimated costs for the DBM tunnels average as high as $1,600 per foot because of the greater depths, weaker rock, longer tunnels, possible remoteness geographically, and other related factors. Two concepts for egress machines have been proposed by the Robbins and Jarva companies. The details of use of geotechnical data are given in Appendix A and were qualitatively for estimates of support requirements and costs. The only calculation that could be made based upon available data was the assumption that squeezing ground would occur if the stress concentration at the ribs of the tunnels exceeds the unconfined compressive strength. Average conditions assumed for the tunnel calculations in the COSTUN program automatically include the effects of rock quality designation (RQD), etc.

AD-A092 036/3 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Nanticoke Creek Watershed Project Site 10 Dam (Inventory I.D. Number NY 713, DEC 85D-3946, Susquehanna River Basin, Broome County, New York, Phase I Inspection Report,
George Koch. 30 Sep 80, 105p
Contract DACW51-79-C-0001
Original contains color plates: All DTIC and NTIS reproductions will be in black and white.
Availability: Microfiche copies only.

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. The examination of documents and visual inspection of the Site 10 dam and appurtent structures did not reveal conditions which constitute a hazard to human life or property. (Author)

AD-A092 037/1 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program, Browns Reservoir Dam (Inventory Number ID NY-763, DEC Number 232 BE-4361), Long Island Basin, Westchester County, New York. Phase I Inspection Report,
George Koch. 30 Sep 80, 106p

Contract DACW51-79-C-0001
Original contains color plates: All DTIC and NTIS reproductions will be in black and white.
Availability: Microfiche copies only.

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. The examination of documents and the visual inspection of Browns Reservoir Dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies which require further investigation and remedial action. (Author)

AD-A092 038/9 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Mt. Beacon Reservoir (Inventory Number NY-26), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
Eugene O'Brien. 30 Sep 80, 107p
Contract DACW51-79-C-0001
Includes envelope with 4 graphs. Prepared in cooperation with Tippetts-Abbett-McCarthy-Stralton, New York, NY.
Availability: Microfiche copies only.

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization.

AD-A092 039/7 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Morgan Lake Dam (Inventory Number NY-787), Hudson River Basin, Dutchess County, New York. Phase I Inspection Reprot,
Eugene O'Brien. 12 Sep 80, 98p
Contract DACW51-79-C-0001
Prepared in cooperation with Tippetts-Abbett-McCarthy-Stralton, New York, NY.
Availability: Microfiche copies only.

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization.

AD-A092 040/5 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Harlem Valley Reservoir (Inventory Number N.Y. 273), Housatonic River Basin, Dutchess County, New York. Phase I Inspection Report,
Eugene O'Brien. 30 Sep 80, 140p
Contract DACW51-79-C-0001
Prepared in cooperation with Tippetts-Abbett-McCarthy-Stratton, New York, NY. Includes envelope with maps and charts.
Availability: Microfiche copies only.

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. Examination of the available documents and visual inspection of the Harlem Valley Reservoir Dam did not reveal conditions which constitute a hazard to human life or property. (Author)

AD-A092 042/1 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Garnerville Dam (Inventory Number N.Y. 744), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
Eugene O'Brien. Aug 80, 116p
Contract DACW51-79-C-0001
Prepared in cooperation with Tippetts-Abbett-McCarthy-Stratton, New York, NY. Original contains color plates: All DTIC and NTIS reproductions will be in black and white.
Availability: Microfiche copies only.

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. (Author)

AD-A092 059/5 PC **A06**/MF **A01**
Naval Ocean Systems Center, San Diego, CA.
Hardware and Performance Evaluation: Tethered Float Breakwater Near-Shore Ocean Model.
Final rept. Apr 78-Feb 80,
J. D. Clinkenbeard. Jul 80, 109p Rept no. NOSC/TR-574

A Tethered Float Breakwater was installed off Imperial Beach, California, on 12 April 1978. The primary purpose was hardware verification. Its ability to survive in the ocean environment was evaluated over a 22-month period. Also evaluated were corrosion resistance, marine fouling, abrasion, burial, and scouring. The feasibility of a breakwater system that can be towed to an operational site, installed with a minimum of support equipment, and later removed or relocated was demonstrated. Routine maintenance and replacement of components were performed in the open ocean. (Author)

AD-A092 132/0 PC **A06**/MF **A01**
Construction Engineering Research Lab. (Army), Champaign, IL.
Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
Final rept.,
Bernard Donahue, J. Oxley, and C. Buie. Sep 80, 108p Rept no. CERL-TR-N-93

This report analyzes and evaluates existing flue gas desulfurization (FGD) techniques which could be used on Army boilers. Only those processes which are proven (in use for two or more years) or which have potential for use on Army-sized boilers in the near future are considered. In addition, this report presents guidelines to help Army installations select FGD processes appropriate to their needs. (Author)

AD-A092 165/0 PC **A05**/MF **A01**
Northrop Services, Inc., Las Vegas, NV.
Williams Air Force Base Air Quality Monitoring Study,
D. C. Sheesley, S. J. Gordon, and M. L. Ehlert. Jul 80, 91p EPA/600/4-80-037, AFESC/ESL-TR-79-33
Contract EPA-68-03-2591

Air quality and meteorological data were collected continuously from a network of five ground monitoring stations located at Williams Air Force Base WAFB near Phoenix, Arizona, during June 1976 through June 1977. Data reported here will serve as detailed input for defining the accuracy limits of the Air Quality Assessment Model. The data have been analyzed in order to determine the air quality impact attributable to WAFB operations. Also reported are the preliminary results obtained from several related special studies designed to characterize horizontal and vertical dispersion of WAFB emissions. The data indicate no significant air quality impact at WAFB resulting from aircraft operations. (Author)

AD-A092 170/0 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Wappingers Falls Dam (I.D. Number N.Y. 3, D.E.C. 613A), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
Eugene O'Brien. 30 Sep 80, 103p
Contract DACW51-79-C-0001
Prepared in cooperation with Tippetts-Abbett-McCarthy-Stratton, New York, NY. Includes envelope with map. Original contains color plates: All DTIC/NTIS reproductions will be in black and white.
Availability: Microfiche copies only.

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. The examination of documents and the visual inspection of Wappingers Falls Dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies which require further investigations and remedial actions. It is recommended that within 3 months of notification to the owner, a detailed hydrological and hydraulic investigations be undertaken to more accurately determine the site specific characteristics of the watershed and their affect upon the overtopping potential of the dam. At the same time structural stability analysis of the dam should be performed. Within twelve (12) months of the date of notification to the owner, any modification to the structure deemed necessary as a result of investigations, to achieve a spillway capacity adequate to discharge the outflow from at least one-half PMF should have been completed. In the interim, a detailed emergency operation plan and warning system should be promptly developed. Also, during periods of unusually heavy precipitation, around-the-clock surveillance should be provided. In addition, the dam has a number of problem areas which, if left uncorrected, have the potential for the development of hazardous conditions and must be corrected within twelve (12) months.

AD-A092 218/7 MF **A01**
O'Brien and Gere Engineers, Inc., Philadelphia, PA.
National Dam Safety Program. Lookover Lake Dam (NJ00565), Hudson River Basin, Longhouse Brook, Passaic, County, New Jersey. Phase I Inspection Report.
Final rept.,
John J. Williams. Sep 80, 116p
Contract DACW61-80-D-0013
Original contains color plates: All DTIC and NTIS reproductions will be in black and white.
Availability: Microfiche copies only.

Based on visual observations made during the inspections, information provided by the New Jersey Department of Environmental Protection (NJDEP) and conversations with the Owners, Lookover Lake Dam is considered to be in poor overall condition. The dam is an earth embankment approximately 150 feet long with a maximum height of about 10 feet. The top width of the dam is approximately 20 feet and the upstream and downstream slopes appear to be relatively flat. The spillway section has a crest length of 7.2 feet and provides one foot of freeboard between the spillway crest and the top of the dam. Hydrologic and hydraulic analyses indicates that the spillway is capable of discharging approximately 7 percent of the SDF prior to overtopping of the embankment.

AD-A092 219/5 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Tivoli Lake Dam (Inventory Number N.Y. 52), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
Eugene O'Brien. 30 Sep 80, 99p
Contract DACW51-79-C-0001
Prepared in cooperation with Tippetts-Abbett-McCarthy-Stratton, New York, NY. Original contains color plates: All DTIC and NTIS reproductions will be in black and white. Includes envelope with charts.
Availability: Microfiche copies only.

The examination of documents and the visual inspection of Tivoli Lake (Cranberry Lake) did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies which require further investigations and remedial actions. Using Corps of Engineers screening criteria for the initial review of spillway adequacy, it has been determined that the dam would be overtopped for all storms exceeding approximately 38 percent of the Probable Maximum Flood (PMF). The spillway is therefore, adjudged as seriously inadequate and the dam is assessed as unsafe, non-emergency. The classification of 'unsafe' applied to a dam because of a seriously inadequate spillway is not meant to connote the same degree of emergency as would be associated with an 'unsafe' classification applied for a structural deficiency. It does mean, however, that based on an initial screening, and preliminary computations, there appears to be a serious deficiency in spillway capacity so that if a severe storm were to occur, overtopping and failure of the dam would take place, significantly increasing the hazard to loss of life downstream from the dam.

AD-A092 220/3 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Lake Suzanne (Inventory Number N.Y. 760) Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
Eugene O'Brien. 30 Sep 80, 79p
Contract DACW51-79-C-0001
Prepared in cooperation with Tippetts-Abbett-McCarthy-Stratton, New York, N.Y. Original contains color plates: All DTIC and NTIS reproductions will be in black and white.
Availability: Microfiche copies only.

The spillway is about 24 feet wide, ungated and has a sill 2 feet wide and 1.6 feet below the top of the dam. A 16-inch diameter cast iron reservoir drain is located near the left end of the spillway. The examination of documents and the visual inspection of Lake Suzanne did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies which require further investigation and remedial action. Using the Corps of Engineers screening criteria for review of spillway adequacy, it has been determined that the dam would be overtopped for all storms exceeding approximately 4 percent of the PMF.

AD-A092 225/2 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Beaver Dam Lake (Inventory Number N.Y. 619), Hudson River Basin, Orange County, New York. Phase I Inspection Report,
Eugene O'Brien. 11 Sep 80, 89p
Contract DACW51-79-C-0001
Prepared in cooperation with Tippetts-Abbett-McCarthy-Stratton, New York, NY. Original contains color plates: All DTIC/NTIC reproductions will be in black and white.
Availability: Microfiche copies only.

The Beaver Dam Lake, formerly known as Salisbury Mills Dam, consists of left and right non-overflow sections with an included spillway. The dam is about 335 feet long with a maximum height of about 35 feet. The width of the wall at its top, which is also the crest of dam, varies from 3.5 feet to 3.75 feet. The principal spillway is an ungated masonry and concrete gravity structure which is divided into two sections by an 8-foot wide stepped brick pier. The left and right spillway sections are about 30 feet and 35 feet long, respectively. Examination of available documents and a visual inspection of the dam and the appurtenant structures did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies which require further investigation and remedial action. Using Corps of Engineers screening criteria, it has been determined that the dam would be overtopped for all storms exceeding approximately 37 percent of Probable Maximum Flood (PMF).

AD-A092 227/8 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Harrower Pond Dam (Inventory Number NY207), Mohawk River Basin, Montgomery County, New York. Phase I Inspection Report,
George Koch. 26 Sep 80, 91p
Contract DACW51-79-C-0001
Original contains color plates: All DTIC and NTIS reproductions will be in black and white.
Availability: Microfiche copies only.

Harrower Pond Dam consists of a 175-ft. long earth embankment, the maximum height of which is 25 feet above original grade adjacent to the left spillway abutment. A 20 foot high vertical masonry wall forms the spillway section. The spillway is 77 feet long and eight feet in thickness. The area immediately upstream from the spillway is filled in with sediment and the remains of a previously existing timber crib dam. The right spillway abutment is adjacent to an intake and gate/powerhouse which has been abandoned. The examination of documents and the visual inspection of Harrower Pond Dam revealed conditions which constitute an immediate hazard to human life and property. The condition of the dam is considered to be 'unsafe, emergency', for several reasons. As a result of the 'unsafe, emergency' conditions of the dam, a 'Summary Abatement Order' was issued by the Commissioner of the New York State Department of Environmental Conservation on May 23, 1980.

AD-A092 237/7 PC **A14**/MF **A01**
Army Engineer Waterways Experiment Station, Vicksburg, MS.
Corps of Engineers Hydraulic Design Criteria. Volume I.
Jan 77, 309p
See also Volume 2, AD-A092 238.

This loose-leaf data-book is based on analyses of experimental investigations, model studies, and prototype observations. The purpose is to make the data available to offices of the Corps of Engineers for use as a hydraulic design criteria. Certain design aids based on accepted theory, such as energy-depth curves, are included. In order that this data-book may be of greatest service, individual sheets and charts will be distributed as issued. Revised sheets and charts will be issued as new data become available. The data-book is being issued in loose-leaf form to facilitate the addition of new material and the revision of previously issued sheets and charts. A classification index presents the range of subjects covered in this compilation. A table of contents is included to assist in the location of specific charts.

AD-A092 238/5 PC **A08**/MF **A01**
Army Engineer Waterways Experiment Station, Vicksburg, MS.
Corps of Engineers Hydraulic Design Criteria. Volume 2.
Jan 77, 171p
See also Volume 1, AD-A092 237.

For abstract see AD-A092 237.

AD-A092 296/3 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Patterson, Brixius, Grey Creek Watershed Project, Site 1 (Inventory Number NY698), Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
George Koch. Aug 80, 101p
Contract DACW51-79-C-0001
Original contains color plates: All DTIC and NTIS reproductions will be in black and white.
Availability: Microfiche copies only.

The Site 1 Dam consists of a 1300 feet long homogeneous earth embankment with an auxiliary spillway located at the right end of the embankment in a cut section beyond the abutment of the embankment. The maximum height of the dam is 65 feet. The embankment has a crest width of 20 feet, an upstream slope of 1 vertical on 3 horizontal, and a downstream slope of 1 on 2.5. The auxiliary spillway is a vegetated earth channel, with a bottom width of 340 feet and side slopes of 1 on 3 (left slope) and 1 on 2 (right slope). The principal spillway is a rectangular concrete riser which extends above the upstream slope near the toe of slope. The riser is topped by a triangular trash rack, the sides of which form a drop inlet, which is utilized during high reservoir levels. Under low flow conditions, a rectangular low stage inlet, in the upstream face of the riser, controls the reservoir level. A 30 inch diameter reinforced concrete pipe controls the flow between the riser and the impact basin located at the toe of the dam. An 18 inch diameter pipe, with a manually operated slide gate, the controls of which are located atop the riser, serve as the reservoir drain system. The examination of documents and visual inspection of the Site 1 Dam and appurtenant structures did not reveal conditions which constitute a hazard to human life or property. The discharge capacity of the spillway is adequate for the PMF (Probable Maximum Flood).

AD-A092 396/1 PC **A12**/MF **A01**
Army Engineer Div. New England, Waltham, MA.
Boston Harbor, Massachusetts Main Report for Debris Removal. Volume I. Revision.
Final feasibility rept.
May 80, 252p
See also Volume 2, AD-A092 397.

This study determined the engineering feasibility and environmental acceptability in removal and disposal of floatable debris from Boston Harbor. A total of 533 waterfront structures were found to be sources of debris. The total volume of floatable debris and non-floatable material from these sources is estimated to be about 3.2 million cubic feet and 4,500 tons, respectively. (Author)

AD-A092 397/9 PC **A14**/MF **A01**
Army Engineer Div. New England, Waltham, MA.
Boston Harbor, Massachusetts Feasibility Report for Debris Removal. Volume 2. Part A-Debris Inventory. Summary Sheets. Part B - Land Enhancement. Summary Sheets. Revision.
Final feasibility rept.
May 80, 302p
See also Volume 1, AD-A092 396.

This study determined the engineering feasibility and environmental acceptability of removal and disposal of floatable debris from Boston Harbor. A total of 533 waterfront structures were found to be sources of debris. The total volume of floatable debris and non-floatable material from these sources is estimated to be about 3.2 million cubic feet and 4,500 tons, respectively. (Author)

AD-A092 398/7 PC **A05**/MF **A01**
Army Engineer Div. New England, Waltham, MA.
Final Environmental Impact Statement on Debris Removal from Boston Harbor, Massachusetts. Revision.
Final feasibility study.
May 80, 86p

This report describes a project for a one-time cleanup program to rid Boston Harbor of its sources of debris. These sources have presented a potential hazard to navigation, and have suppressed land values. The sources of the debris are cited in the report, the environmental impacts are considered, and alternatives presented. (Author)

AD-A092 452/2 MF **A01**
New York State Dept. of Environmental Conservation, Albany.
National Dam Safety Program. Patterson Brixius Grey Creek Watershed Project, Site 2 (Inventory Number NY 725). Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
George Koch. 30 Sep 80, 108p
Contract DACW51-79-C-0001
Availability: Microfiche copies only.

The dam is located on Brixius Creek, a tributary of the Susquehanna River, approximately 1/2 mile north of Union, NY. The examination of documents and visual inspection of the Site 2 Dam and appurtenant structures did not reveal conditions which constitute a hazard to human life or property. The discharge capacity of the spillways is adequate for the PMF (Probable Maximum Flood). However the following remedial actions must be completed within 1 year from notification to the owner: (1) Eliminate the pedestrian traffic on the embankment and auxiliary spillway, backfill all depressions and reseed these areas; (2) repair the depressions on the upstream slope in the vicinity of the riser and beyond the downstream toe of the dam; (3) Remove the parking area from the auxiliary spillway channel and reseed the affected area; (4) Remove the vegetation from the inlet and outlet of the auxiliary spillway, and the downstream channel; (5) Investigate the conditions of the reservoir drain and restore to operational status, if required; (6) Repair the erosion or the Taft Road embankment and clean out the sediment within the 6 feet diameter highway culvert; and (7) provide a program of periodic inspection and maintenance of the dam and appurtenances, including yearly operation and lubrication of the reservoir drain system.

AD-907 934/4 PC **A04**/MF **A01**
Army Engineer Waterways Experiment Station, Vicksburg, MS.
Expedient Surfacing and Drainage of Roads, Streets, and Parking and Storage Areas in Theater of Operations. Report 2. Tests Conducted Between August 1968 and July 1969,
Cecil D. Burns, and Victor C. Barber. Feb 71, 62p
Rept no. AEWES-Misc-Paper-S-69-11-2
See also Report 1, AD-850 667L.
Distribution limitation now removed.

Engineering tests were conducted on a test road covered with an asphalt-impregnated polypropylene membrane to determine the effectiveness of the combined materials as a dustproof, waterproof wearing surface over adequate-strength subgrades and as an encasing membrane used to form a membrane- enveloped soil layer (MESL) in areas where high water tables exist. The polypropylene- asphalt membrane was installed on the test road, exposed to varying climatological conditions prevalent in the Vicksburg area, and subjected to mixed pneumatic-tired traffic of military vehicles. Vehicles used for testing were a 2-1/2 ton, 6 x 6 cargo or dump truck and a 5-ton, 6 x 6 cargo or dump truck, both carrying maximum off-highway loads and having appropriate tire pressures. It was concluded from the test results that polypropylene-asphalt membrane will furnish a waterproof, dustproof wearing surface to any otherwise satisfactory subgrade for periods in excess of 2 years and will sustain many thousands of repetitions of pneumatic-tired convoy traffic without suffering significant damage, and MESL CONSTRUCTION IS EFFECTIVE IN PROVIDING A STABLE ROADWAY IN AREAS HAVING POOR DRAINAGE AND HIGH WATER TABLES. (Author, modified-PL)

COO-2185-13 PC **A11**/MF **A01**
Columbia Univ., New York.
Transport and Transfer Rates in the Waters of the Continental Shelf. Annual Report.
P. E. Biscaye. Sep 80, 237p
Contract AS02-76EV02185

The goal of govern project is to understand and quantify the processes that the transport and dispersal of energy-related pollutants introduced to the waters of the continental shelf and slope. The report is divided into sections dealing with processes associated with suspended solids; processes associated with sediments sinks for radionuclides and other pollutants; and spreading of water characteristics and species in solution. (ERA citation 06:001350)

DOE/ER/10003-T2 PC **A05**/MF **A01**
National Telecommunications and Information Administration, Boulder. Co. Inst. for Telecommunication Sciences.
Environmental Assessment for the Satellite Power System: Concept Development and Evaluation Program - Effects of Ionospheric Heating on Telecommunications.
Aug 80, 97p
Contract AC02-79CH10003

The microwave power beam that is associated with the operation of the Satellite Power System (SPS) will provide a continuous source of power density into the earth's ionosphere. As currently conceptualized, the power density at the center of the beam would be 23 mW/cm exp 2 . This power density may be of sufficient magnitude to give rise to changes in the structure of the ionosphere and to increases in the electron temperature in the ionosphere. The work described in this report was undertaken to assess the degree to which the ionosphere and ionospheric-dependent telecommunication systems would be impacted by the passage of the Satellite Power System microwave power beam. The program of study utilized resources from Government, industry, and universities in order to conduct theoretical and experimental investigations that relate to the operational scenario surrounding the Satellite Power System concept. The results of the numerous investigations that were undertaken are summarized in this document and areas in which further study is required are pointed out. (ERA citation 06:000407)

DOE/ER/10035-01 PC **A03**/MF **A01**
National Aeronautics and Space Administration, Moffett Field, CA. Ames Research Center.
Environmental Impacts of the Satellite Power System (SPS) On the Middle Atmosphere.
Oct 80, 39p
Contract AI01-79ER10035

The heavy-lift launch vehicles (HLLV) proposed for use in constructing satellite power systems (SPS) would deposit various contaminants in the middle atmosphere, contaminants that could conceivably have adverse effects on climate and upper air structure. These contaminants consist of the major constituents of water vapor, hydrogen, carbon dioxide, and carbon monoxide, and the minor constituents of sulfur dioxide and nitric oxide in the rocket effluent, as well as nitric oxide formed during reentry. To assess the magnitudes of the effects, we have constructed new models or modified existing models. They are: one- and two-dimensional photochemical models, a plume model, a noctilucent cloud and contrail model, a reentry model, and a model of the lower ionosphere, all of which are described in detail in the report. Using a scenario of 400 launches per year for 10 years, we have performed assessments and arrived at the following conclusions which are given. (ERA citation 06:000408)

DOE/EV/70031-5 PC **A03**/MF **A01**
Oregon State Univ., Corvallis. Air Resources Center.
Analysis of Baseline Data from Federally Leased Oil Shale Tracts in Colorado and Utah.
M. A. Wolf. May 80, 31p
Contract AT06-76EV70031

Data acquired by lessees of three federally leased oil shale tracts in Colorado and Utah were analyzed in an effort to develop additional information which would be useful in guiding development of those extensive resources. Comparative data within each tract and among the three tracts for ozone, total suspended particulate, and a number of meteorological variables are presented. Comments are provided concerning the uneven quality of the data. The data are utilized to show that the wide variability of ozone concentration observed at the several sites on the three tracts can be attributed principally to the daily maximum mixed layer depth of the region and to the depth and intensity of the nocturnal inversion locally. Criticism is made that the baseline programs for the three tracts were pursued independently. Finally, a research program to provide new information on short and long range transport, dispersion, and removal processes in complex terrain is urged. (ERA citation 06:001306)

PAT-APPL-6-101 364 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Preparation of Grout for Stabilization of Abandoned In-situ Oil Shale Retorts.
Patent Application,
R. G. Mallon. Filed 7 Dec 79, 14p
Contract W-7405-ENG-48
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

A process is described for the preparation of grout from burned shale by treating the burned shale in steam at approximately 700 exp 0 C to maximize the production of the materials alite and larnite. Oil shale removed to the surface during the preparation of an in-situ retort is first retorted on the surface and then the carbon is burned off, leaving burned shale. The burned shale is treated in steam at approximately 700 exp 0 C for about 70 minutes. The treated shale is then ground and mixed with water to produce a grout which is pumped into an abandoned, processed in-situ retort, flowing into the void spaces and then bonding up to form a rigid, solidified mass which prevents surface subsidence and leaching of the spent shale by ground water. (ERA citation 06:001978)

PB81-120784 PC **A05**/MF **A01**
Illinois Univ. at Urbana-Champaign. Inst. for Environmental Studies.
Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
Final rept.,
Daniel J. Alpert, and Philip K. Hopke. Nov 80, 85p EPA-600/2-80-195

Target transformation factor analysis (TTFA) has been applied to an analysis of a subset of the aerosol-composition data acquired during the Regional Air Pollution Study (RAPS) for St. Louis, MO. The purpose of the study was to evaluate the capability of TTFA to resolve sources of airborne particulate matter in a set of ambient-aerosol samples. Only the samples from July and August 1976, both fine and coarse fractions, were examined in this study. Because of the large number of different sources in the St. Louis area, superior results were obtained from the examination of the variation in aerosol composition with time at a single location rather than the spatial variation of over multiple sites during a shorter time period.

PB81-121154 PC **A04**/MF **A01**
Little (Arthur D.), Inc., Cambridge, MA.
Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
Final rept.,
Edward T. Peters, J. Ronald Lawter, and Arthur L. Benson. Dec 80, 58p EPA-600/2-80-203
Contract EPA-68-02-1219

The literature on filtration theory and past experimental work was reviewed and critiqued with regard to the needs of the EPA relative to stationary source sampling. A laboratory evaluation of aerosol collection efficiency and flow resistance of filters potentially useful in EPA sampling programs was designed with respect to several variables, including particle size (0.05, about 0.1 and 0.5 micrometers MMD); gas velocity (4, 12, 30, 83 and 126 cm/sec); and aerosol composition and density (g/sq cm)-DOP(1.0), Na Cl (2.17),Be SO4 . 2 H2O(2.36), Pb (NO3)2 (4.53), and Cd I (5.67). Filter collection efficiencies were measured for the various evaluation parameters with a DOP penetrometer or sodium flame photometer. With two exceptions, collection efficiencies of greater than 99 percent were obtained for all filters and test conditions. The exceptions, tested with 0.3 micrometers MMD Na Cl aerosol, were Millipore Mitex and Whatman 41 filters, with collection efficiencies of 75 and 50 percent, respectively. The other membrane filters (Millipore AA and Fluoropore) exhibited high flow resistance at 30 and 83 cm/sec and could not be tested at higher flow rates.

PB81-121253 PC **A07**/MF **A01**
Purdue Univ., Lafayette, IN. Water Resources Research Center.
Indiana Five-Year Water Resources Research and Development Plan. Fiscal Years 1982-1986.
1980, 135p W81-00279

The geographical location of Indiana is such that it receives an ample supply of water on an average annual basis through precipitation. However, substantial and generally unpredictable variations in the precipitation as the water supply source have direct and essentially immediate impacts whose seriousness depends on a number of factors. Indiana water resources problems have been categorized into six areas: (1) hydrologic and hydraulic processes; (2) planning and institutions; (3) water quality; (4) atmospheric and precipitation processes; (5) hydrologic-ecologic relationships; and (6) water supply, development and management. Fifty-three research priorities were determined for these six areas.

PB81-122707 PC **A04**/MF **A01**
Industrial Environmental Research Lab., Research Triangle Park, NC.
Developments in Particulate Control for Coal-Fired Power Plants.
Journal article,
Dennis C. Drehmel. c1980, 74p EPA-600/J-80-092, IERL-RTP-P-261

The paper discusses recent developments in particulate control for coal-fired power plants. The developments are responding to a double challenge to conventional coal-fired power plant emissions control technology: (1) lower particulate emissions require more efficient control devices; and (2) lower SOx emissions achieved with low-sulfur coal combustion are coupled with poor electrostatic precipitator (ESP) performance. Possible solutions to these problems include conditioning, hot-side ESPs, and novel ESPs. Novel ESPs include the Buell Trielectrode ESP, the University of Denmark Pulse Generator/ESP, and the Cold Electrode ESP. Also under development are two-stage ESPs using novel charging sections; e.g., the Southern Research Institute Precharger, the APS High Intensity Ionizer, and the University of Tokyo Boxer Charger. As an important alternative to ESPs, baghouses have shown general success in controlling emissions from coal-fired power plants. Current baghouses are installed at the Carneo, Harrington, Holtwood, Kramer, Martin Drake, Nucla, and Sunbury power stations. When operating properly, baghouses can limit emissions to <5 mg/cu nm at pressure drops of <2 kPa. Not all

baghouses have been completely successful; e.g., both high pressure drop and bag loss have been experienced at the Harrington station. (Copyright (c) 1980 AIChE.)

PB81-122723 Not available NTIS
Southern Research Inst., Birmingham, AL.
Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
Journal article, Jun 74-Jan 78,
Joseph D. McCain, and Dale L. Harmon. c1980, 9p EPA-600/J-80-089, IERL-RTP-P-107
Contracts EPA-68-02-1480, EPA-68-02-2181
Pub. in AIChE Symposium Series 196, v76 p346-352 1980.

The report gives results of performance tests to determine the fine particle collection of four novel scrubbers: a Lone Star Steel Steam-Hydro Scrubber, an Aronetics (Chemico) Two-Phase Jet Scrubber, an Entoleter Centrifield Scrubber, and a CEA Variable-Throat Venturi Scrubber. The energy consumption of the scrubbers ranged from about 3000 to 400,000 J/std cu m (dry). Collection efficiencies for 1-micrometer diameter particles ranged from about 75% for the collector operating with the lowest energy consumption to 99.995% for the highest. Fractional collection efficiencies were measured using a variety of inertial, optical, diffusional, and electrical methods for particle diameters of from about 0.01 to about 5 micrometers for each device tested. In addition, the overall collection efficiency was measured using either EPA Method 5 or 7. Two of the devices were controlling emissions from primary metallurgical processes; one, from an asphalt batching plant; and one, from a pulverized-coal-fired utility boiler. (Copyright (c) The American Institute of Chemical Engineers, 1980.)

PB81-123705 PC **A13**/MF **A01**
Texas Univ. at Austin. Center for Transportation Research.
Precast Repair of Continuously Reinforced Concrete Pavement.
Research rept. Dec 77-May 79,
Gary Eugene Elkins, B. Frank McCullough, and W. Ronald Hudson. May 79, 287p CTR-3-8-75-177-15, FHWA/TX-79/26-177-15
Prepared in cooperation with Texas State Dept. of Highways and Public Transportation, Austin.

An investigation into the applicability of precast slabs for rapid repair of CRCP is presented. Analytical techniques are used to study loading of repair slabs due to volume change, wheel loads, and lifting, with detailed results presented in several of the appendices. Rapid repair of CRCP with precast slabs appears feasible. Calculations indicate that slabs longer than 7 feet (2.13m) have potential problems with excessive steel stress at the construction joints. These stresses can be controlled with a weakened plane, which causes the concrete to crack at mid-span, thus lowering the stresses. A precast slab can be satisfactorily lifted from four lifting points secured into the slab and situated between 1/5 and 1/4 the span length from each edge of the slab. Steel connections to maintain the continuity of steel reinforcement in CRCP is a critical aspect of the repair. These connections can be made by welding, clamping, or use of commercial rebar connectors. Polymer concrete is a fast setting material which has excellent properties as a repair material for use around these connections. The set time of the material to be placed around the steel connections will, to a large extent, govern the overall repair time.

PB81-123788 PC **A10**/MF **A01**
California Inst. of Tech., Pasadena. Earthquake Engineering Research Lab.
Full-Scale Experimental Investigation of a Modern Earth Dam,
A. M. Abdel-Ghaffar, R. F. Scott, and M. J. Craig. Feb 80, 204p EERL-80-02, NSF/RA-800215
Grant NSF-PFR77-23687

Extensive investigation of a modern earth dam's behavior during relatively intense shaking is reported. The study utilized records on full-scale dynamic tests recovered from the Santa Felicia Dam in Southern California. These records provided information on the dynamic characteristics of the dam which was instrumented with motion sensors. The project gathered experimental data used for testing and developing various analytical and numerical methods for computing the natural frequencies and mode shapes of dams and, particularly, for predicting earthquake response. Data on the dam's responses indicate the following: Analytical or finite models are needed to represent the prototype realistically in vertical and longitudinal directions and to include coupling of these directional motions; More than two sets of strong-motion instruments should be deployed on and in the vicinity of the structure to obtain reliable information on a dam's three-dimensional behavior during an earthquake. Suggestions are made for the appropriate location of instruments.

PB81-124000 PC **A13**/MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.
Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
Craig S. Porter, and Anil K. Chopra. Jul 80, 287p UCB/EERC-80/17, NSF/RA-800291
Grants NSF-ATA75-20554, NSF-ENV76-80073

The substructure method is adapted and generalized for response analysis of arch dams subjected to upstream-downstream, cross-stream and vertical components of ground motion. The arch dam is assumed to be a segment of a circular cylinder, bounded by vertical, radial banks of the river valley enclosing a central angle of 90 degrees. The arch dam and impounded water are treated as two substructures of the total system and displacements of the dam are representeed as a linear combination of the first few natural modes of vibration of the dam alone. For this simple geometry of the arch dam and fluid domain, mathematical solutions of the wave equation are presented to determine the hydrodynamic terms in the finite element equations for the dam. Responses to arbitrary ground motion can be obtained by Fourier synthesis procedures applied to the complex frequency response functions determined by the analysis procedures developed in this report. Numerical results are presented for the complex frequency response functions for hydrodynamic pressures on rigid dams due to each of the three ground motion components. The variation of these pressures with excitation frequency, depth below the free surface of water and circumferential location on the upstream face of the dam is studied, and compared with the hydrodynamic pressures on straight gravity dams. The responses of three arch dams, with different radius to height ratios, are analyzed for three conditions: the dam alone without water, and the dam with full reservoir, considering water to be compressible in one case and neglecting water compressibility in the other case. The complex frequency response functions for accelerations at the dam crest due to the three components of ground motion -- upstream-downstream component, cross-stream component and vertical component -- are presented. These response results are discussed in detail.

PB81-124158 PC **A03**/MF **A01**
Oklahoma Water Resources Research Inst., Stillwater.
Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
Technical completion rept. 1 Oct 79-30 Sep 80,
Rong-Chun Chang, and Jimmy F. Harp. Sep 80, 41p W81-00380, OWRT-A-092-OKLA(1)
Contract DI-14-34-0001-0138

An analysis of the response of a river system to sand mining requires establishing the morphology and hydraulics of the system prior to man's activities. The complexity of alluvial channel flow and the dynamic nature of river systems are reflected in the large number of interrelated variables necessary to describe natural streams. Sand mining decreases the local flow velocity with an attendant increase in flow capacity and more water storage becomes available. The long-term impact depends on the rates of sand removal and natural supply. Overmining results in lowering the base level for upper reaches and tributaries. The reduction of bedload will induce the downstream tendency to decrease the channel width-to-depth ratio and increase the sinuosity.

PB81-124620 PC **A10**/MF **A01**
South Australia Director-General of Transport, Adelaide.
Light Rail Application and Design,
K. T. Norley. Dec 79, 222p

The purpose of the report is to document an investigation of overseas Light Rail practice undertaken as part of the Preliminary Design of the Adelaide Northeast Light Rail Project. The report combines a broad appreciation of the application of Light Rail and other public transport modes in selected cities, with the investigation of design and other details of specific relevance to the Northeast project and other potential applications of Light Rail technology in Adelaide.

PB81-124638 PC **A09**/MF **A01**
Colorado Div. of Wildlife, Fort Collins.
Wildlife Research Report. Part One.
Jul 80, 178p

Methods, devices, or structures related to reducing the number of deer-vehicle accidents were evaluated or experimentally tested after obtaining preliminary data on study areas and methodology. These methods, devices, or structures were highway lighting, underpasses, overpasses, 2.44-m fences and one-way deer gates, and deer guards. During the highway lighting study, 84 deer-vehicle accidents occurred, 45 and 39 with lights off and on, respectively. Behavioral responses of deer to the Vail deer underpass did not change substantially over the 10 years (1970-1979) of study. Five deer guard prototypes were evaluated. Highway lighting, as tested in this study, did not result in significantly fewer accidents.

PB81-124851 PC **A05**/MF **A01**
California State Dept. of Transportation, Sacramento. Office of Transportation Lab.
The Effectiveness of Horizontal Drains.
Final rept.,
Duane D. Smith. Jun 80, 82p TL-632161, FHWA/CA/TL-80/16

The effectiveness of horizontal drains installed in California over a period of 40 years is evaluated. Seven installations including Nojoqui Grade 1940, Cloverdale 1941, Whitmore Maintenance Station 1963, San Andreas 1964, Pacific House 1969, York Mountain 1972, and La Selva Beach 1974 were selected for the study. Major factors which influence the long-term effectiveness of horizontal drains are discussed. These factors include lithology, location, orientation, spacing, pH, mineral content, age and maintenance programs. Drain cleaning equipment and techniques were studied. A new cleaning system utilizing high pressure water was developed and is described. Horizontal drain evaluation, inspection, cleaning and repair forms designed for field use were developed during the study and are included with the final report. A comparison of steel and PVC casing is made, including cost, handling, transport, installation and resistance to corrosive action of groundwater.

PB81-125460 PC **A10**/MF **A01**
South Australia Director-General of Transport, Adelaide.
Passenger Transport Innovation in Adelaide: Taxi-Cabs.
Final rept.,
Scott MacLean, and Leonie Segal. Jul 76, 214p
Prepared in cooperation with Nicholas Clark and Associates, South Melbourne (Australia).

The report describes further study of passenger transport innovation in Adelaide. A broad understanding was given of the objectives of passenger transport, and potentially valuable transport innovations were isolated in another volume. Among the many possibilities discussed were those relating to innovative use of taxi-cabs. In the present study, the way in which taxi-cabs are and could be operated is further examined, with particular emphasis given to innovative operation and usage.

PB81-125601 PC **A04**/MF **A01**
Environmental Protection Agency, Chicago, IL. Region V.
Region V's Guidance for Developing a State Malfunction Notification and Correction Program,
Henry Onsgard. Dec 80, 74p EPA-905/2-80-006

This report is intended to summarize the development of the United States Environmental Protec-

tion Agency, Region V's malfunction policy, Region V's States malfunction regulations and to provide assistance to the States outside of Region V in reviewing their malfunction regulations.

PB81-127326 PC **A04**/MF **A01**
Midwest Research Inst., Kansas City, MO.
Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
Final rept. 20 Jun 79-30 Sep 80,
John W. Nebgen, and Gary D. Hinshaw. Oct 80, 67p W81-00316, OWRT-C-90005-S(9504)(1)
Contract DI-14-34-0001-9504

Findings of a laboratory study undertaken to define the range of applications of the alumina-lime-soda process have been reported. This process was effective for the removal of calcium sulfate at pH 12, and for the removal of dissolved silica in the pH range of 8.5-9 in earlier studies reported by Midwest, while emphasis of the present study was directed towards removal of trace constituents in water. The study findings revealed that oxygenated anions of toxic elements such as arsenic, selenium, and chromium (VI) behaved similarly to sulfate, and could be removed by alumina-lime-soda at pH 12. It was observed that borate ion could also be removed at pH 12, but only in the presence of sulfate. Furthermore, phosphate and color due to dissolved organic matter can be removed in the 8.5-9 pH range, using the same conditions as for removal of dissolved silica by alumina-lime-soda. Heavy metals such as copper and zinc were also removed under these conditions. Mechanisms for removal of solutes by aluminum species generated during alumina-lime-soda treatment have been postulated.

PB81-127359 PC **A07**/MF **A01**
Central Naugatuck Valley Regional Planning Agency, Waterbury, CT.
Overcoming Land Use Barriers to Solar Access: Solar Planning Recommendations for Local Communities.
Final rept.,
Charles Vidich. Feb 80, 147p CNVR/80-01
Sponsored in part by Northeast Solar Energy Center, Boston, MA.

This report analyzes the existing legal and institutional barriers to the installation of solar energy systems and to the protection of solar access caused by land use regulations and policies in the Central Naugatuck Valley Region. The report identifies specific barriers in zoning, subdivision, inland wetland, historic district, building code, and public health code regulations which could impede the development of solar domestic hot water systems and passive solar design concepts. Specific recommendations are provided for overcoming land use barriers to solar access and for promoting energy conscious building, landscaping and site planning design in Connecticut.

PB81-127391 PC **A06**/MF **A01**
Virginia Water Resources Research Center, Blacksburg.
Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
Richard F. McCormick, and Paul H. King. Nov 80, 108p VPI-VWRRC-BULL-129, W81-00501, OWRT-A-081-VA(1)

This research investigated the technical and economic feasibility of the direct filtration technique for treating high-quality Virginia surface waters prior to domestic use. One of the flow schemes that was investigated eliminates the sedimentation basin while employing a full, conventional flocculation period. Another eliminates separate sedimentation and flocculation units altogether. Major variables that were assessed in terms of their effects on direct filtration performances included raw water characteristics such as turbidity, color, total dissolved solids, total hardness, algae count, and total coliform count; filter design variables such as type and size of media (two dual media filters and one trimedia were evaluated); and operating variables such as hydraulic loading rate and nature and dosage of applied coagulant.

PB81-127409 PC **A03**/MF **A01**
Rhode Island Univ., Kingston. Dept. of Civil and Ocean Engineering.
Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
Technical completion rept. 1 Oct 78-30 Sep 80,
Vito A. Nacci. 1980, 36p W81-00504, OWRT-A-070-RI(1)
Contract DI-14-34-0001-0142

The investigation of the process in which a sediment will depollute itself under a chemico-osmotic gradient is presented in regards to both a theoretical and experimental approach. A system was designed utilizing electrical conductivity methods to determine the time rate of the diffusional process. This was in turn compared to theory based on irreversible thermodynamics and Terzaghi's theory on consolidation. The diffusivity measured through means outlined in this study was then shown to be reflective of the sediment properties. Once the diffusivity had been measured it was possible to obtain a 'time estimate' for depolluting these sediments.

PB81-127417 PC **A02**/MF **A01**
Rhode Island Univ., Kingston.
UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
Completion rept.,
Calvin P. C. Poon, and Bruno M. Vittimberga. 1980, 25p W81-00503, OWRT-A-071-RI(1)
Contract DI-14-34-0001-9042

Photochemical degradation of dye molecules was studied by exposing solutions with acid, direct and dispersed dyes to UV. Acetone as a high triplet energy sensitizer enhanced the color removal rate by more than 100 times. Dissolved oxygen was an energy quencher which could be removed by N2 bubbling. N2 bubbling also provided adequate mixing to bring the dye molecules in closer contact with the radiation source. The only adequate means of measuring color removal was to measure color units as described by the American Dye Manufacturer's Institute (ADMI) because the color and its predominant wavelength changed in the course of photodegradation. Studies of continuous flow models included a tray model as well as single, and multi-column models. A tray model was found less effective. Single and multiple-column models were equally effective for some acid dyes but the multiple-column model was more efficient for resistent dyes. The power consumption per unit volume of dye solution treated was calculated for all dyes.

PB81-127805 PC **A03**/MF **A01**
Transport and Road Research Lab., Crowthorne (England).
A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
Barbara J. Mostyn, and D. Sheppard. c1980, 35p TRRL-SUPPLEMENTARY-548
Also pub. as ISSN-0305-1315.

The introduction of a speed limit or increases in enforcement of speed limits can lead to reductions in accidents. Nevertheless, it seems that a large proportion of motorists break speed limits sometimes, and this report describes a survey among drivers to examine why this occurs. The survey was conducted in 1976. The study confirms some pilot research which showed that many motorists are not fully aware of how to recognize what speed limit applies to a stretch of road. Speed limits had been changed several times prior to the time of the survey, and this survey showed that many motorists were not aware of the speed limits which applied at that time. Motorists seem to think that speed limits are useful as guidelines and few feel that motorists should be left to decide appropriate speeds for themselves. Motorists favor quite severe punishments for those who exceed speed limits by 20 mile/h, particularly at the higher limits. Some 44 per cent of motorists say they do not wish to see speed limits changed. Some data are presented on which type of driver favors or disapproves of limits and some suggestions are made about ways in which knowledge might be increased about limits and where they apply. (Copyright (c) Crown Copyright 1980.)

PB81-128290 PC **A03**/MF **A01**
Goeteborg Univ. (Sweden).
Metoder foer Bestaemning av Halkfrekventa Vaegstraeckor (Methods for Detecting Road Sections with High Frequency of Ice Formation),
Sven Lindqvist. 1976, 34p GUNI-10
Text in Swedish.

The author has earlier discussed the influence of micro and mesoclimatological factors on ice formation on roads. During the winter season 1975-76 two new investigations in this project were carried out. The aim of both these investigations was to work out appropriate methods for detecting sections with high frequency of ice formation. One of the investigations was carried out as a conventional local climatological study of air temperature and air humidity close to the road surface. Measuring trips by car and stationary instruments were used for data collection. The investigated roads have a length of 180 kilometers. To make a visual combination of results possible, a simple local climatological map has been constructed. The frequency of slipperiness on roads has been marked on the maps in three classes and for each marking the micrometeorological situation for ice formation is stated. These maps are of value for road maintenance and have already been used when placing stations which give information to road offices concerning air temperature, air humidity and road surface temperature. The other investigation concentrated on surveying road surface temperatures by means of airborne infrared thermography. Thermography can be a useful tool in the future when detecting road sections with high frequency of ice formation.

PB81-128316 PC **A03**/MF **A01**
Goeteborg Univ. (Sweden).
Studier av Halka Pa Vaegar (Studies of Slipperiness on Roads),
Sven Lindqvist. 1979, 48p GUNI-12
Text in Swedish.

The main project involves micro and mesoclimatological investigations on roads for detection of road sections with high frequency of slipperiness. The results are partly to be of direct assistance to maintenance authorities, partly to give information on siting ice-warning devices. When performing measuring trips for road climatological investigations the cars used have been equipped with instruments for registration of air temperature on two levels and air humidity. The possibility of using thermal infrared scanning for detection of road surface temperature has also been discussed. In connection with meteorological situations an unprejudiced analysis of different kinds of slipperiness on roads was made. The investigation includes a discussion of factors involved in different ice formation processes and parameters possible to record. Twenty-four different situations with coating of ice, rime, snow, slush and sleet were found. Finally some ideas are given of what parameters should be recorded in slipperiness warning systems.

PB81-129009 PC **A03**/MF **A01**
Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV. Remote Sensing Lab.
Summary of the Western Energy Overhead Monitoring Project.
Final rept. 1 Jul 75-31 Oct 79,
Paul Ishikawa, Jr., and G. A. Shelton. Nov 80, 38p EPA-600/4-80-051
Contract EPA-68-03-2636
Color illustrations reproduced in black and white.

The Environmental Protection Agency and the National Aeronautics and Space Administration entered into a five-year overhead monitoring project in June, 1975. The purpose of this joint project was to transfer, from NASA to EPA, hardware and software technology for processing remotely sensed digital data and to assist EPA in developing and maintaining an operational remote sensing monitoring system. The overall objective was to define, develop, and demonstrate operational remote sensing techniques to rapidly monitor, in a cost-effective manner, the success with which an energy-related extraction site has been, or is being, rehabilitated. This report discusses the technology transfer that has successfully taken place. It also describes the remote sensing monitoring system EPA has established.

PB81-129017 PC **A04**/MF **A01**
Colorado State Univ., Fort Collins. Dept. of Agricultural and Chemical Engineering.
Reconnaissance Study of Leachate Quality from Raw Mined Oil Shale - Laboratory Columns.
Final rept.,
David B. McWhorter. Dec 80, 56p EPA-600/7-80-181
Grant EPA-R-806278

This report presents the results of the chemical characterization of leachates generated from laboratory columns of several unretorted mined oil shales, unmined shales, and soils. The findings are indicators of the levels of common and trace species that can be expected to occur in field generated leachates. For further information contact the Energy Pollution Control Division.

PB81-129124 PC **A06**/MF **A01**
Boulder, CO.
Treatment of Primary Effluent by Rapid Infiltration.
Final rept. Nov 78-Oct 79,
R. B. Hartman, K. D. Linstedt, E. R. Bennett, and R. R. Carlson. Dec 80, 116p EPA-600/2-80-207
Grant EPA-R-803931
Prepared in cooperation with Colorado Univ. at Boulder.

Treatment performance of three rapid infiltration basins receiving primary treated municipal treated wastewater is evaluated and compared with a previous study in which secondary treated municipal wastewater was applied at the City of Boulder, Colorado, Sewage Treatment Plant. The prime objectives of the project are evaluation of the pretreatment provided, the hydraulic load to the soil, duration of wetting and drying cycles, and climatic influences on system performance.

PB81-129801 PC **A04**/MF **A01**
Northeast-Midwest Inst., Washington, DC.
Water Resource Priorities for the Midwest.
Research rept.,
Michael Sullivan, and Richard Durkin. Sep 80, 75p EDA-ERD-80-169
Grants EDA-ERD-699-G-79-33, EDA-99-7-13507

This report discusses various water resource priorities for seven states: Ohio, Indiana, Illinois, Michigan, Minnesota, Wisconsin, and Iowa. These priorities include: water quality, water supply, energy, transportation, flood control and damage reduction, coastal management, and recreation. Policy alternatives to accomplish these priorities are also discussed.

PB81-130379 PC **A06**/MF **A01**
Southampton Univ. (England). Inst. of Sound and Vibration Research.
Prediction of Impact Factor for Military Bridges.
Technical rept.,
V. J. Virchis. Dec 79, 112p ISVR-TR-107
Sponsored in part by Military Vehicles and Engineering Establishment, Christchurch (England).

A numerical study has been conducted on the dynamic response of nonuniform bridges subjected to the passage of heavy, multi-axle vehicles. For practical purposes, short span military bridges are made from lightweight components. As a consequence, the vehicle to bridge weight ratios encountered in this study have been as high as eight to one. To facilitate their use, these bridges are expected to be usable on unprepared sites. Therefore, the bridge may have tapered ramps for access and egress. The dynamic model is represented as a simply supported beam, with variable cross-section, being traversed by a multi-degree of freedom, spring-mass system with viscous damping. The mathematical model uses the method of normal modes to solve the equation of motion for the beam response. The resulting coupled differential equations of motion, representing the vehicle-bridge system, are then solved numerically by the Runge-Kutta integration method. The model was designed to account for entry and exit step conditions to the bridge, initial dynamic conditions, as well as for the loss of wheel contact with the bridge surface. The performance of the computer model in calculating the dynamic response has been successfully demonstrated by the presentation of model results with strain records obtained from field trials.

PB81-130502 PC **A20**/MF **A01**
Environmental Protection Agency, San Francisco, CA. Region IX.
Modesto Wastewater Facilities Improvements.
Environmental impact statement (Final).
Dec 79, 460p
Prepared in cooperation with Jones and Stokes Associates, Inc., Sacramento, CA., Gruen, Gruen and Associates, Esmaili (H.) and Associates, Clean Water Consultants, and Hydroscience, Inc.Portions of this document are not fully legible.

The current project planning focuses on a change from river discharge to agricultural reuse of treated effluent as the primary disposal mode. About 19,000 acre-feet of effluent would be made available annually for agricultural reuse. Continuous effluent discharge to the San Joaquin River would be replaced with intermittent winter discharge of higher quality effluent at greatly increased flow rates. This EIS has emphasized an evaluation of the impacts of urbanization, particularly those affecting prime and unique farmland. The city of Modesto has adopted or is actively considering a variety of planning and zoning measures to mitigate the projected urbanization impacts.

PB81-130676 PC **A19**/MF **A01**
Geological Survey, Albany, NY. Water Resources Div.
Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
Robert H. Cartwright, and James A. Ziarno. Sep 80, 445p USGS/WRD/WRI-80/078, USGS/WRI-80-77
Prepared in cooperation with New York State Dept. of Health, Albany.

Chemical analyses of 2,802 water samples from 784 of approximately 1,500 community water systems in the State of New York are presented. The data were collected from November 1970 to May 1975. The analyses include physical properties, major and minor constituents, pesticide residues, and radiochemical data. Some bottom-material analyses are included.

PB81-130783 PC **A03**/MF **A01**
Environmental Protection Agency, Washington, DC. Office of Water Program Operations.
National Municipal Policy and Strategy for Construction Grants, NPDES Permits, and Enforcement Under the Clean Water Act.
Final rept.
Oct 79, 50p

To respond to the municipal noncompliance problem, EPA developed in October, 1979, a National Municipal Policy and Strategy for more effectively managing municipal compliance with the Clean Water Act. Its goal is to integrate permits, enforcement, and construction grant activities. The report describes the processes and procedures municipalities must meet to comply with the program.

PB81-130965 PC **A06**/MF **A01**
Southern Colorado Economic Development District, Pueblo.
Water Availability for the City of Lamar, Colorado.
Dec 79, 107p EDA-80-0187
Grant EDA-05-06-01854
Prepared by Wheeler (W. W.) and Associates, Inc., Englewood, CO.

The purpose of this study was to investigate all feasible ways to supply additional water for municipal and industrial use by the City of Lamar, Colorado. Consideration was given to the present and anticipated water demands by Lamar, the various sources of water supply and treatment methods.

PB81-131658 PC **A17**/MF **A01**
Municipal Environmental Research Lab., Cincinnati, OH.
Wastewater Alternatives for Small Communities,
Steven W. Hathaway. Dec 80, 385p EPA-600/9-80-062
Proceedings of a Seminar Presented to EPA Regional Coordinators and State Small Community Systems Coordinators, August, 1978.

This report is a compilation of many papers presented at two of EPA's Seminars on Wastewater Alternatives for Small Communities in August 1978. Titles of papers are: On-Site Alternatives; On-Site Systems Residuals; Pressure Sewer Systems; Alternative Sewer Systems and Costs of Alternatives; Small Flows Clearinghouse; Generating and Analyzing Alternatives; Institutional Considerations in Implementing On-Site and Small Community Wastewater Management Programs.

PB81-132151 PC **A04**/MF **A01**
Los Angeles-Orange County Metropolitan Area Project, Whittier, CA.
Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area.
Apr 80, 55p
Grant EPA-C-06-1042-011
See also PB81-132169.

This Summary of the Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR) and Facilities Plan evaluates the Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area. The Proposed Program was designed for environmentally, socially and economically cost-effective recovery of resources from wastewater sludges and reliable management of wastewater sludge to minimize the public health risks and environmental degradation. The Proposed Program is divided into three separate entities, which would provide for sludge management in the Los Angeles County Sanitation Districts, Orange County Sanitation Districts, and the City of Los Angeles.

PB81-132169 PC **A13**/MF **A01**
Los Angeles-Orange County Metropolitan Area Project, Whittier, CA.
Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area. Appendices.
Apr 80, 290p
See also PB81-132151.Portions of this document are not fully legible.

The Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR) and Facilities Plan evaluates the Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area. The Proposed Program was designed for environmentally, socially and economically cost-effective recovery of resources from wastewater sludges and reliable management of wastewater sludge to minimize the public health risks and environmental degradation. The Proposed Program is divided into three separate entities, which would provide for sludge management in the Los Angeles County Sanitation Districts, Orange County Sanitation Districts, and the City of Los Angeles.

PB81-132227 PC **A09**/MF **A01**
Aerospace Corp., Germantown, MD.
Military Wastes-to-Energy Applications.
Final rept. for FY 1979-80,
Keith E. Kawaoka. Nov 80, 200p ATR-80(8374)-1

This analysis focuses on the military waste material and byproduct stream and the potential for energy recovery and utilization. Feedstock material includes municipal-type solid waste, selected installation hazardous waste, and biomass residue. The study objectives are to (1) analyze the characteristics of the military waste stream, (2) identify potential energy recovery options, and (3) examine and assess the technical and economic feasibility and environmental and institutional impacts of various energy recovery approaches.

PB81-132995 PC **A04**/MF **A01**
California State Dept. of Transportation, Sacramento. Office of Transportation Lab.
Erosion Control Product Testing Using Rainfall Simulation.
Final rept.,
Thomas P. Hoover. Apr 80, 63p TL-632147, FHWA/CA/TL-80/08
Contract DOT-F-5-15

This report describes the development, design, operation and application of a large droplet, high intensity rainfall simulator. The apparatus generates 6.25 mm droplets and a 10 inch per hour rainstorm randomly dispersed to prevent drilling of the sample surfaces. An 8x12 foot array of generators is used to test a 4x8 foot sloped surface. The report also presents a recommended test method for evaluating erosion control products and media using the simulator. This method provides accelerated yet realistic erosion forces acting on a simulated highway slope.

PB81-133159 PC **A12**/MF **A01**
California Univ., Davis. Dept. of Environmental Horticulture.
Highway Operation and Plant Damage.
Final rept.,
Andrew T. Leiser, Ravindran Palaniyandi, Jack L. Paul, and Robert Raabe. Apr 80, 264p FHWA/CA/TL-80/03
Sponsored in part by California State Dept. of Transportation, Sacramento. See also report dated Jan 76, PB-266 458.

A five year study investigated the relationship between highway operation and plant damage in the Tahoe Basin and adjacent highways. These studies include field surveys, greenhouse studies, soil salt application trials, foliar salt application trials, an Armillaria root rot inoculation study, a seasonal fluctuation of salt study, the effect of temperature on salt uptake and a bark absorption of salt study. Highway deicing salt is a cause of damage on conifers, usually limited to 30 feet from the pavement edge. Drainage patterns and salt carried by aerosols may extend damage farther from the pavement. Of the four principal conifers in the study area, Jeffrey pine and lodgepole pine appeared the most tolerant of salt and incense cedar was the most susceptible.

PB81-136202 PC **A18**/MF **A01**
Texas Univ. at Austin. Center for Research in Water Resources.
Optimal Risk-Based Design of Water Resource Engineering Projects.
Final rept.,
Yeou-Koung Tung, and Larry W. Mays. Aug 80, 420p CRWR-171
Grant NSF-ENG78-05449

In the design and operation of hydraulic structures there exist many uncertainties relating to the hydrologic, hydraulic, structural, and economic aspects. This paper presents procedures which systematically analyze the uncertainties involved in both the hydrologic and hydraulic aspects so that the risk and the reliability of the hydraulic structure can be evaluated. A general framework for evaluating the risk and reliability of hydraulic structures is developed which takes into account the uncertain features involved in both the hydrologic and hydraulic aspects. First-order analysis of uncertainty is used for analyzing the hydraulic uncertainty in which the capacity of a hydraulic structure is expressed as the function of several variables with uncertainty. The incorporation of uncertainty analysis into an optimization framework to obtain an optimal risk-based design is made. Examples for the culvert design and flood levee design are presented.

PB81-138125 PC **A04**/MF **A01**
Lewis and Clark Coll., Portland, OR. Natural Resources Law Inst.
The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
Final rept.,
James L. Huffman, Marvin Berry, Nancy Brown, Nicholas P. Lovrich, and John C. Pierce. Jul 80, 54p W81-00317, OWRT-C-80093-P(8493)(1)
Contract DI-14-34-0001-8403
See also Volume 2, PB81-138133.
Also available in set of 5 reports PC E20, PB81-138117.

This report, set out in five volumes, examined the impact of alternative institutional approaches for the allocation of water to instream flows, with particular examination of the role of technical information in State decision-making processes for Colorado, Idaho, Montana, and Washington. Volume I, defined the scope of the overall study, presented the cumulative contents of the five volumes, and a preliminary comparative assessment for instream flow protection in the four States.

PB81-138133 PC **A07**/MF **A01**
Lewis and Clark Coll., Portland, OR. Natural Resources Law Inst.
The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
Final rept.,
James L. Huffman, and Marvin P. Berry. Jul 80, 140p W81-00318, OWRT-C-80093-P(8403)(2)
Contract DI-14-34-0001-8403
See also Volume 1, PB81-138125, and Volume 3, PB81-138141. Prepared in cooperation with Santa Fe Coll., NM. Dept. of Political Science.
Also available in set of 5 reports PC E20, PB81-138117.

This report represented Volume II of a five-volume report on the topic of water allocation to instream flows; the overall study also including the States of Idaho, Montana, and Washington. The overall study examined the impact of alternative institutional approaches for the allocation of water to instream flows. The report includes water law, a judicial survey, present Colorado laws, and implementation of the laws and policies in Colorado.

PB81-138141 PC **A10**/MF **A01**
Washington State Univ., Pullman. Dept. of Political Science.
The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
Final rept.,
John C. Pierce, Nicholas P. Lovrich, Jr., and Annabel Cook. Jul 80, 205p W81-00319, OWRT-C-80093-P(8403)(3)
Contract DI-14-34-0001-8403
See also Volume 2, PB81-138133, and Volume 4, PB81-138158.
Also available in set of 5 reports PC E20, PB81-138117.

This report represented Volume III of a five-volume report on the topic of water allocation to instream flows; the overall study also including the States of Colorado, Montana, and Washington. The overall study examined the impact of alternative institutional approaches for allocation of water to instream flows. The Idaho section (Volume III) of this report examined the role of technical information in Idaho water resources management policy-making processes, and the degree to which policy preferences of the public were reflected in preferences of political activists and Idaho State legislators.

PB81-138158 PC **A12**/MF **A01**
Lewis and Clark Coll., Portland, OR. Natural Resources Law Inst.
The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
Final rept.,
James L. Huffman. Jul 80, 255p W81-00320, OWRT-C-80093-P(8403)(4)
Contract DI-14-34-0001-8403
See also Volume 3, PB81-138141, and Volume 5, PB81-138166.
Also available in set of 5 reports PC E20, PB81-138117.

This report represented Volume IV of a five-volume report on the topic of water allocation to instream flows; the overall study also including the States of Colorado, Idaho, and Washington. The Montana report of this study covered an examination of Montana water law; topics of minimum flow preservation under Montana Law, the Yellowstone Reservation hearings, municipal reservations, agricultural applications, and instream applications; a discussion of the overall legal process; and an assessment of the future of water reservations in Montana.

PB81-138166 PC **A05**/MF **A01**
Lewis and Clark Coll., Portland, OR. Natural Resources Law Inst.
The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
Final rept.,
Nancy C. Brown, and Pinky S. Wassenberg. Jul 80, 77p W81-00321, OWRT-C-80093-P(8403)(5)
Contract DI-14-34-0001-8403
See also Volume 4, PB81-138158.
Also available in set of 5 reports PC E20, PB81-138117.

This report represented Volume V of a five-volume report on the topic of water allocation to instream flows; the overall study also including the States of Colorado, Idaho, and Montana. The State of Washington report on this study covered Washington State water law, past and present status of instream flows, the Western Washington Instream Resources Protection Program, the controversy on protecting versus preserving fishery resources, Federal and Indian reserved rights, State resource management of the Columbia River, and the Columbia River Instream Resources Protection Program.

PB81-140683 PC **A04**/MF **A01**
California Univ., Los Angeles. Water Resources Center.
A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
Masters' thesis,
Gary Alan O'Keefe. 1980, 57p UCAL-WRC-W-576, W81-00751, OWRT-A-077-CAL(1)

A resource allocation program is developed to assist in basin management where there are multiple objectives. The problem involves the allocation of: (1) water from groundwater and imported supplies to the users of a watershed, (2) wastewater from each user to the treatment plants of the region, and (3) treated water from the treatment plants to the disposal sites. The objectives which are of concern are minimization of the total cost of transporting and treating the water, and optimization of the water quality in the groundwater basin. The program consists of a simulation model, a single objective optimization model and a modification subroutine. The output from the simulation model is the final water levels and quality for the given allocation plan.

PB81-142192 PC **A09**/MF **A01**
Environmental Monitoring Systems Lab., Las Vegas, NV.
Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
Final rept.,
S. M. Melancon, B. C. Hess, and R. W. Thomas. Sep 80, 185p EPA-600/7-80-151
Prepared in cooperation with Nevada Univ., Las Vegas. Dept. of Biology.

The Yampa and White River Basins are key areas in the Nation's search for untaped resources to supplement increasing energy demands. The basins contain vast beds of low-sulfur, strippable coal that potentially will support a large number of coal-fired powerplants as well as some of the richest oil shale deposits in the United States. However, conversion of these energy resources into commercially usable power and fuel is expected will have considerable impact on water resources in the Yampa and White River Basins. Decreased flows from energy developments will accompany increased salt and sediment loadings. Water quality monitoring needs in the basins are addressed with priority listings of parameters for measurement to detect changes in water quality as a result of energy resource development.

PB81-801631 PC **N01**/MF **N01**
National Technical Information Service, Springfield, VA.
Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
Rept. for 1964-Sep 78,
Robena J. Brown. Dec 80, 277p

The bibliography on acid mine drainage cites studies primarily concerning control and treatment methods. Reports on hydrogeology, ecology, formation, and sources are included. (This updated bibliography contains 270 citations, none of which are new entries to the previous edition.)

PB81-801649 PC **N01**/MF **N01**
National Technical Information Service, Springfield, VA.

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
Rept. for Oct 78-Dec 80,
Robena J. Brown. Dec 80, 63p
Supersedes PB80-801475, and NTIS/PS-78/1067.

The bibliography on acid mine drainage cites studies primarily concerning control and treatment methods. Reports on hydrogeology, ecology, formation, and sources are included. (This updated bibliography contains 56 citations, 26 of which are new entries to the previous edition.)

PB81-850992 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Aug 80,
John H. Frey. Sep 80, 112p NERACUSGNT1706
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the application of systems analysis and operations research to surface, air, and space transportation systems for both passengers and materials. Consideration is also given to the management of transportation systems and to services and energy requirements related to transportation systems. (Contains 98 citations.)

PB81-851008 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Aug 80,
John H. Frey. Sep 80, 71p NERACEDBNT1706
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the application of systems analysis and operations research to surface, air, and space transportation systems for both passengers and materials. Consideration is also given to the management of transportation systems and to services and energy requirements related to transportation systems. (Contains 57 citations.)

PB81-851016 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Aug 80,
John H. Frey. Sep 80, 51p NERACEI NT1706
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the application of systems analysis and operations research to surface, air, and space transportation systems for both passengers and materials. Consideration is also given to the management of transportation systems and to services and energy requirements related to transportation systems. (Contains 53 citations.)

SAN-2068-1 PC **A08**/MF **A01**
GRIPS Joint Powers Agency, Napa, CA.
Peregrine Falcon Study. Final Report.
1 Feb 80, 170p
Contract FG03-78ET27170
Portions of document are illegible.

Three papers are included. A separate abstract was prepared for each. (ERA citation 06:000636)

SAND-80-1954C PC **A03**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Design and Operation of the Sandia Pilot Plant.
M. E. Morris. 1980, 35p CONF-800964-3
Contract AC04-76DP00789
National symposium on the use of cesium-137 to process sludge for further reduction of pathogens, Denver, CO, USA, 3 Sep 1980.

An 8 ton/day dry sewage sludge irradiator was designed and constructed at Sandia National Laboratories in the last half of 1977 and in 1978; and was charged with exp 137 Cs and made operational in the spring of 1979. The design of the major subsystems of the irradiator is described. Subsequent operational experiences are also summarized. (ERA citation 06:001174)

UCRL-85019 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Impact of Land Use on Solar Industrial Process Heat for the Food Processing Industry.
A. B. Casamajor. 2 Oct 80, 7p CONF-801208-2
Contract W-7405-ENG-48
Annual IPH conference, Houston, TX, USA, 16 Dec 1980.

A solar land use study of 1330 food processing plants located in the far-western United States (Arizona, California, Hawaii, Oregon, and Washington) has been conducted. Based upon estimates of each plant's annual energy consumption of process heat, derived from: annual sales figures, employment, and total energy consumption for that plant's Standard Industrial Classification (SIC) group; and the available surface area at each plant, determined by a site inspection, an assessment of each plant's potential for solar energy was made. Those industries having the highest potential for applying solar energy to their process heat loads include: fruit and vegetable packing, sugar refining, meat packing, wine and brandy, bread, and dairy products. It has been further determined that about 25% of the energy used for food processing in the study area can be supplied by solar if all of the available surface area at and adjacent to these plants is devoted to solar collectors. (ERA citation 06:000535)

13C. Construction Equipment Materials, and Supplies

AD-A091 932/4 PC **A02**/MF **A01**
Forest Products Lab., Madison, WI.
Smoldering Wave-Front Velocity in Fiberboard.
Forest Service research paper,
John J. Brenden, and Erwin L. Schaffer. Sep 80, 20p Rept no. FSRP-FPL-367

Fiberboard is used in large quantities for use in a broad spectrum of housing and building applications, one of which is sound-deadening board. As a result of reports documenting fire experiences with sound-deadening board, research was undertaken toward reducing or eliminating smoldering tendencies of fiberboard products. This report reviews previous work and reports on a test method to reproducibly measure smoldering wave-front velocity. (Author)

PB81-123846 PC **A05**/MF **A01**
Kentucky Bureau of Highways, Lexington. Div. of Research.
Occurrences of Expansive Limestone in Kentucky.
Research rept.,
Ralph G. Coy, and Jas. H. Havens. Jan 80, 94p RR-535

Research Report 325, 'Expansive Limestone Aggregate in a Concrete Pavement', April 1972, remains a worthy, preliminary treatise on the two, principal roles of limestone aggregates in the premature deterioration of concrete. The role addressed more directly here, and there, is the expansion of clayey dolomitic limestones. The other role, of course, is freezing and thawing of porous, nearly saturated, otherwise non-expansive, aggregate in the concrete. It is desirable to be able to associate unsoundness with properties and composition and also with appearance, texture, and geological occurrence. Texture has been illustrated here and elsewhere. Scanning electron micrographs included here have some special qualities and significance not recognized heretofore.

PB81-130361 PC **A07**/MF **A01**
Southampton Univ. (England). Inst. of Sound and Vibration Research.
Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
Technical rept.,
H. S. Gill. Feb 80, 150p ISVR-TR-104

The study reported here is concerned with defining important characteristics of noise exposure of construction equipment at operator's ear position. The acoustic parameters studied were noise levels, spectra, sound pressure level time history and cumulative probability distribution of sound pressure levels. In addition, this report reviews the occupational noise exposure regulations and standards world-wide and also describes the methods employed by manufacturers in reducing operator's noise exposure from most common constructional plant. A large scale survey of the reported literature was conducted to evaluate the typical operator's noise exposure, during typical working day, for each machine type employed on any construction site. These estimated noise exposure levels were assessed with respect to some of the important current national and international occupational noise exposure standards and regulations and also existing hearing damage criteria. Furthermore, it has been shown that with the application of 'state of the art' noise control techniques, it is possible to reduce the operator's noise exposure significantly and thus be able to comply with the existing occupational noise exposure standards.

13E. Couplings, Fittings, Fasteners, and Joints

AD-A092 362/3 PC **A04**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Fatigue in Graphite/Epoxy Bolted Joints.
Master's thesis,
Mark Charles Lee. Jun 80, 69p Rept no. AFIT-CI-80-14T

Fatigue tests were made on graphite/epoxy bolted joints with an eight ply quasi-isotropic (90 deg, -45 deg, 0 deg, +45 deg)s laminate containing 6.35 mm diameter holes. A tensile load was applied to the specimens using a double lap joint configuration with socket head cap screws torqued to 4.0 N-m. Preliminary investigation involved static testing on a range of specimen geometries to determine failure modes, ultimate strengths, and torque effects. Increasing load (Prot) fatigue tests gave endurance limits as fractions of average static strength and were .94 for tension through the hole, .90 for corner shear/shear, and .88 for bearing. The only comparable existing data found was approximately .80 for bearing fatigue.

13F. Ground Transportation Equipment

PB81-120172 PC **A05**/MF **A01**
Chase, Rosen and Wallace, Inc., Alexandria, VA.
The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
Final rept.,
J. D. Wilkins, A. Schwartz, and T. E. Parkinson.
Jun 80, 87p UMTA-IT-06-0193-79-2
Contract DOT-UT-80037
See also Task 1 Report, PB80-104870.

This Task 2 report contains a summary of the Task 1 report (PB80-104870) and an examination of the potential market for trolley coach (TC) systems in the United States. TC capital and operating costs are estimated, and the impacts of TC transportation on land use, community aesthetics, and energy consumption are described. In this report, potential barriers to TC expansion are identified and possible UMTA policies are discussed. Some of the conclusions stated in this report are that: improvements in TC technology such as chopper control reduces power consumption 20 percent and provides a smoother ride quality; cost of over-

head wire installation is the most significant barrier to new TC systems; there is a definite advantage to TC expansion in terms of long term flexibility of energy source use, and long term reliability of energy supply; and UMTA should maintain a basically neutral position on TC expansion--initiative for such expansion should originate at the local level.

PB81-122004 PC **A02**/MF **A01**
Environmental Protection Agency, Ann Arbor, MI. Technology Assessment and Evaluation Branch.
The Effects of Emission Control System Malfunctions or Maladjustments on Exhaust Emissions.
Technical rept.
Oct 76, 15p EPA-AA-TAEB-77-01

The Environmental Protection Agency is currently undertaking programs that measure the exhaust emissions of in-use vehicles. One of these programs, the Emission Factors Program (EFP), has generated data indicating that a high percentage of in-use 1975 automobiles have exhaust emissions exceeding the Federal emission standards for 1975-1976 light-duty vehicles. Typical failing vehicles have very high CO emissions. High CO emissions may be indicative of improper adjustment of either the idle mixture or the choke. Since idle mixture and choke adjustments are easily accessible and adjusted on most cars, it seems probable that the maladjustment of these two items may be responsible for some of the high emission levels measured in the EFP. In order to further investigate these possibilities, a test program was conducted by the EPA to quantify the effects of various engine maladjustments on exhaust emissions. This test program would help identify maladjustments resulting in the types of failures encountered in the EFP.

PB81-122996 PC **A03**/MF **A01**
Environmental Protection Agency, Ann Arbor, MI. Control Technology Assessment and Characterization Branch.
Comparison of Gas Phase Hydrocarbon Emissions from Light-Duty Gasoline Vehicles and Light-Duty Vehicles Equipped with Diesel Engines.
Technical rept.,
Penny Carey, and Janet Cohen. Sep 80, 31p
EPA-AA-CTAB/PA/80-5

The purpose of this document is to consolidate much of the existing data on gas phase hydrocarbon exhaust emissions from both gasoline vehicles and vehicles equipped with diesel engines. This subject is of interest because new studies have shown diesel emissions to contain compounds of high molecular weight. This high molecular weight component is dominated by particle-bound hydrocarbons; however, the potential health risk associated with heavy hydrocarbons merits examination of the gas phase as well. Particular emphasis will be placed on the comparison of emissions and their potential carcinogenicity. Other areas to be discussed include evaporative hydrocarbon emissions and the effect of fuel composition on gasoline gaseous hydrocarbon emissions.

PB81-123028 PC **A03**/MF **A01**
Environmental Protection Agency, Ann Arbor, MI. Technology Assessment and Evaluation Branch.
Results of Sulfate Tests on Prototype Vehicles.
Technical rept.
Sep 76, 46p EPA-AA-TAEB-77-03

In January, 1976, the Office of Mobile Source Air Pollution Control (OMSAPC) of the EPA distributed a report on the results of the sulfuric acid baseline program. The report contained results of tests on 56 non-catalyst and catalyst equipped vehicles designed to meet various light duty vehicle emission standards. Since that time, EPA-OMSAPC has continued testing various prototype vehicles with advanced emission control systems. This report discusses the results of OMSAPC testing since completion of the last baseline program report. Fourteen vehicles were tested for gaseous and sulfate emissions during this period. The objective was to further characterize sulfuric acid emissions from vehicles with technologically advanced emission control systems.

PB81-123499 PC **A03**/MF **A01**
Hamilton Test Systems, Inc., Phoenix, AZ.
Testing Support for Evaluation of Inspection/Maintenance Issues (Test Group Nos. 6 and 8).
Technical rept.,
H. Anthony Ashby. 1979, 47p
Contract EPA-68-03-2829
See also PB81-115099.

The intention of test group no. 6 was to evaluate the effect on exhaust emissions of disabling the heated air intake system. Ten vehicles were selected from the loaner fleet and were tested before and after disablement of the heated air intake system. No discernible difference was found between the before and after results. This result was attributed to the short period of time the heated air damper remained in the open position for the 'before disablement' test. Since all vehicles were cold soaked at a nominal temperature of 77 F, the temperature rapidly reached an operating temperature to close the damper. The intent of test group no. 8 was to provide test data to be used to evaluate the ability of various catalyst diagnostic tests to diagnose poisoned catalysts. The poisoning of the catalyst was accomplished by accumulating mileage using tankfuls of leaded fuel. After repeated tankfuls of leaded fuel were consumed, mileage was accumulated using tankfuls of unleaded fuel to provide data for evaluation of the rejuvenation process of the catalytic converter.

PB81-123523 PC **A05**/MF **A01**
Kentucky Bureau of Highways, Lexington. Div. of Research.
Propagation of Traffic Noise.
Research rept. (Final),
Kenneth R. Agent, and Charles V. Zegeer. Mar 80, 88p RR-540

The effects of various traffic, ground cover, and geometric conditions on traffic noise propagation were evaluated in this study. There were two general methods of data collection. The first method consisted of using as many as four sound-level meters and graphic-level recorders to take simultaneous recordings of the traffic stream; the second method involved a constant noise source using a random noise generator. The L10 noise level reduction per doubling of distance was found to increase substantially when the traffic volume was less than 1,000 vehicles per hour. Wind speed and direction were found to have a large effect on noise propagation. Ground cover was also found to have a definite effect. Data were taken on short grass, tall weeds, tall grass, average grass, pavement, gravel, smooth dirt, snow, and plowed field. The drop-off per doubling of distance was found to decrease from about 4.5 dBA for receiver heights of 10 feet (3 m) or below to 3.0 dBA for heights above 10 feet (3 m). At heights above 10 feet (3 m), the type of ground cover did not have a significant influence on the propagation loss. Noise attenuation per doubling of distance remained constant back to about 400 feet (122 m) where the drop-offs were influenced by the ambient noise level. Individual noise readings indicated that noise propagation was influenced by vehicle type and speed. Noise drop-off was larger for smaller percentage levels, but the differences decreased as volumes increased. Source height was also found to have an effect on noise propagation.

PB81-124869 PC **A03**/MF **A01**
Transportation Systems Center, Cambridge, MA.
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
Final rept. Apr-Sep 79,
W. T. Hathaway, C. E. Bogner, and I. Litant. Jul 80, 35p DOT-TSC-UMTA-80-15, UMTA-MA-06-0051-80-2
Contract DOT-MA-06-0051

The Urban Mass Transportation Administration (UMTA) has expended considerable effort in assessing the fire performance characteristics of materials used in transit vehicles. The collection and dissemination of pertinent flammability information are an important part of this research. The large volume of data associated with the flammability characteristics necessitated the establishment of a system for storing the data in such a manner that it would be easily available upon request. In the past, a request for such data required a search of files, journal articles, and manufacturers' literature. To address these problems, a plan for a computerized information storage and retrieval system was devised to accommodate such data queries. This report is intended to provide a review of the organization and operation of UMTA's Materials Data Bank which was established and is maintained by the Transportation Systems Center (TSC). Contained within the Materials Data Bank are two basic categories of information: (1) non-metallic materials flammability data, and (2) fire extinguisher data. Included in this review are the reasons for the Bank's establishment, details of its contents, present operational status, and the identification and evaluation of operational alternatives directed at improving its visibility and its usefulness to the technical community. It is recommended that the best method for managing and disseminating the technical data will be accomplished through TSC. A notice of the availability of this system will be published in the Federal Register.

PB81-128753 PC **A05**/MF **A01**
Statens Vaeg- och Trafikinstitut, Linkoeping (Sweden).
Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
A. Nilsson, and E. Ohlsson. 1980, 87p VTI/MEDDELANDE-193
Also pub. as ISSN-0347-6049.

The National Swedish Road Research Institute has carried out an investigation dealing with the reduction in braking action on water covered road surfaces. An account is given of the theories of friction involved in rubber and in materials which are rigid in comparison to rubber. A review of the existing theories of aquaplaning is followed by definitions of the concepts of inertial aquaplaning and viscous aquaplaning. Field tests have been carried out with a friction test vehicle constructed at the Institute. The tests have shown that the braking action on a road surface completely covered with water is substantially reduced compared to the braking action on the same surface in the merely wet condition. This decrease takes place as soon as the speed exceeds a certain definite value. The decrease in the braking action occurs at a higher speed if the pavement surface is made rougher and if the tire is provided with a more effective tread pattern. A greater effect on the braking action is produced by increasing the roughness of the road surface than by improving the tread pattern of the tire.

PB81-130395 PC **A05**/MF **A01**
Cambridge Univ. (England). Dept. of Engineering.
Flow Restrictions in Railway Tunnels,
A. E. Vardy. 1978, 78p CUED/A-AERO/TR-6
Also pub. as ISSN-0309-7293.

The use of flow restrictions to induce pressure losses at the tail of a train and at a tunnel exit portal is proposed as a method of eliminating the sudden pressure changes experienced by passengers on a single train in a tunnel. The proposal is introduced in a qualitative manner. It is then shown to be theoretically sound, and considerable potential advantage is demonstrated. Relatively little attention is paid to the practical means of inducing pressure losses, but it is shown that geometrical restrictions could be used. Experimental evidence is presented in support of the theoretical proposals.

PB81-130437 PC **A03**/MF **A01**
Association of Swedish Automobile Manufacturers and Wholesalers, Stockholm.
Motor Vehicles and the Environment: Reply to UNEP (United Nations Environment Programme) Questionnaire.
1976, 49p
Proceedings of the UNEP Motor Vehicle Seminar, Paris (France), October 4-6, 1976. Prepared in cooperation with Saab-Scania AB, and AB Volvo.

Motor vehicles and the automotive industry will be the subject of a Workshop on the Environment to be held in October 1976. One result of the 1972 UN Environment Conference held in Stockholm was the establishment of a UN Environment Secretariat in Nairobi. The secretariat-United Nations Environment Programme (UNEP)- has sponsored and will sponsor, a number of workshops with participation by leading executives from various indus-

tries of particular sensitivity from the environmental point of view. Up to now, workshops have been held with the pulp and paper as well as the aluminum industries. Invitations to participate in this motor vehicle seminar have been extended to the governments of countries with vehicle manufacturing industries, to industrial organizations, and to the managing directors of vehicle manufacturers. The invitations distributed by UNEP were accompanied by an introductory report, Motor Vehicles and The Environment, and a very comprehensive questionnaire dealing with the nuisances of motoring, environmental and working conditions within the motor industry, motoring and raw material resources, and urban traffic. It is of great importance that a comprehensive and long range overview be mounted of the problems concerning environment, safety, energy and resources relating to the motor vehicle and the motor industry. Therefore, UNEP's initiative is welcome. The viewpoints and the positions recorded are based on the knowledge, in some parts incomplete, that we have today. It should therefore not be regarded as the fixed and final opinions of the Swedish automobile industry.

13G. Hydraulic and Pneumatic Equipment

PB81-855413 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Walter Van Put. Jun 80, 65p NERACEI NT0581
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information is cited covering piston, screw and rotary air compressors. Design criteria of air systems and lubricants for air compressors are also considered. (Contains 058 citations.)

13H. Industrial Processes

AD-A091 970/4 PC **A03**/MF **A01**
Wright State Univ., Dayton, OH. Coll. of Business and Administration.
The Study of Production Leadtime Forecasting Models.
Final rept.,
Michael J. Cleary. 1 Oct 80, 44p AFOSR-TR-80-1121
Contract F49620-79-C-0170

Production leadtime (PLT) has experienced great fluctuations over the last few years. This can have a great effect upon the Inventory System of the Air Force. Presently the Air Force uses a forecasting model which assumes that PLT in the next time period is equal to PLT in the last time period. In order to improve upon this method, this study investigated both the use of ARMA and Smoothing Models for the prediction of PLT. The ARMA Model was eliminated as an effective prediction model for PLT. This was because the average number of data points was well below the minimum needed to make good forecasts using ARMA. An investigation of various smoothing models suggests that a significant improvement in forecasting can be achieved by using these models instead of the present Air Force Model. (Author)

AD-A092 243/5 PC **A11**/MF **A01**
Army Industrial Base Engineering Activity, Rock Island, IL.
Manufacturing Methods and Technology Program Plan, CY 1980.
Annual rept.,
John Petrone. Sep 80, 233p

Described is the DARCOM Manufacturing Methods and Technology (MMT) Program for the period FY 80-84. This plan was compiled by amending the February 1980 data submitted for the Program Objective Memorandum (POM) Support Document. The amendments take into account subsequent programming actions taken since February; namely, FY80 project approvals, FY81 apportionment submissions, and FY82 budget submissions.

AD-A092 262/5 PC **A06**/MF **A01**
Army Industrial Base Engineering Activity, Rock Island, IL.
Manufacturing Methods and Technology Program Accomplishments,
Hal E. Weidner. Oct 80, 110p

This document contains pictorial illustrations and word descriptions of MM&T project accomplishments. Each page lists a project title, funding, results obtained, and illustrates the process, equipment, or end item supported. (Author)

AD-A092 299/7 PC **A09**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Economic and Technical Study on the Feasibility of Using Advanced Joining Techniques in Constructing Critical Naval Marine Structures.
Master's thesis,
Wayne Joseph Rogalsk. Jun 79, 184p

A design analysis of a submarine's pressure hull components, fabricated from HY-130 steel, is performed in order to determine the welding requirements for fabrication. The amount of welding required is expressed in both linear feet and weight of weld metal deposited. Data on experimental welding of HY-130 is presented. The experiments consisted of single and double pass laser welding of restrained butt welds in one inch thick plates. Penetration capabilities obtainable with 12 KW of laser beam power were determined. Temperature distributions, longitudinal strains, and transverse strains experienced during laser welding of the HY-130 plates are presented in graphical and tabular form. An economic analysis, comparing shielded metal arc, gas metal arc, laser, and electron beam welding processes, for fabricating the HY-130 pressure hull is performed. The economic factors considered were labor and overhead costs, filler metal costs, sheilding gas costs, and electrical power consumption. (Author)

AD-A092 363/1 PC **A05**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
A New Computer Program for Plant Layout Design - OPDEP Optimal Plant Design and Evaluation Program.
Master's thesis,
Allan C. Nelson. 1980, 81p Rept no. AFIT-CI-80-16T

The objective of this paper is to present a detailed explanation of the OPDEP plant layout program, and contrast it with ALDEP, the program upon which it is based. An explanation of the ALDEP program is presented first, along with a critique of its performance, then two improved versions are discussed. The first improved version, called ALRANDOM, merely generates layouts according to the modified output of a random number generator. The second version, called OPDEP, is considerably more sophisticated than the others, and generates its layouts according to a complex heuristic algorithm. This algorithm optimizes the department selection process by analyzing the portion of the layout already completed before making the next department selection. Detailed instructions for using the program, as well as methods for getting the best results from the program are provided. Finally, a comparison of the three programs on some example problems and conclusions of their performance are presented.

PAT-APPL-6-180 542 PC **A02**/MF **A01**
Department of Agriculture, Washington, DC.
Improving the Removal of Lint from Cottonseed.
Patent Application,
Clinton P. Wade, and Stanley P. Rowland. Filed 25 Aug 80, 10p PB81-129413
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This invention relates to wet chemical processing of cotton prior to ginning. The removal of lint fibers from the cottonseed is facilitated by aqueous pretreatments of the cotton boll with dilute chemical substances. The wet processing of the boll renders the lint amenable to easy removal from the seedcoat in the wet or dry states.

PATENT-4 213 924 Not available NTIS
Tennessee Valley Authority, Muscle Shoals, AL.
Granulation and Coating by Improved Method of Heat Removal.
Patent,
Arthur R. Shirley, Jr. Filed 19 Jun 78, patented 22 Jul 80, 12p PB81-116667, PAT-APPL-916 988
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

An improved process is described for the granulation or coating of hygroscopic or nonhygroscopic materials where melt is sprayed onto cascading granules of common or uncommon substrate in an enclosed vessel, and where the heat given off by solidification of the melt is absorbed by evaporation of water. The water is atomized into the granulator as an extremely fine mist and evaporation is effected without impingement of mist on granules or granulator internals. An equation is developed which mathematically represents the thermodynamics of the process and specific values are presented for variables when granulating sulfur or urea.

PB81-132714 PC **A05**/MF **A01**
Westinghouse Research and Development Center, Pittsburgh, PA.
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
Quarterly rept. no. 3,
R. G. Abraham, R. J. S. Stewart, T. Csakvary, L. Y. Shum, and C. Ho. 30 Sep 79, 77p NSF/RA-790394
Grant NSF-ISP78-18773
See also report dated 30 Jun 79, PB80-164809.

The final mechanical layout design is completed for the pilot APAS end bell subassembly system and is 40% completed for pilot APAS motor final assembly system. The detailed mechanical station design has commenced for both systems. Refinements to the master supervisory computer system and detailed vision system software designs were made, relating to communications monitoring, training for inspection, and vision data base design. The Unimate PUMA robot was delivered and is operational. Robot performance evaluation is underway. Grippers and programmable parts presenter prototypes were constructed; experimentation is in progress. Vision system experiments continued with parts viewed in reflected lighting. The current sys.em works well with even illumination which is of a constant intensity. Appendices describe the APAS pilot system operation and the effect of step height on a part's orientation. Finally, a large portion of figurative material is presented.

PB81-851685 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Vacuum Diffusion Welding. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Aug 80,
William V. Sassi. Oct 80, 181p NERACEI NT1939
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover the effects of creep deformation on characteristics of diffusion welded joints, diffusion welding of cast iron and nickel to niobium, low-pressure diffusion bonding of titanium, and diffusion bonding of refractory alloys to steel. Constructing the vacuum structures for Joint European Torus (J.E.T.) is also included in the bibliography. (Contains 200 citations.)

PB81-855124 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Plastics Extrusion. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Walter Van Put. Jun 80, 208p NERACEI NT0270

Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information cited on development and applications of extrusion of plastics. Topics such as design criteria of extruder equipment, extrusion coater, cooling equipment, coextrusion, single or twin screw extruders, die design computer controlled extruders, and some safety tips are also included. (Contains 200 citations.)

PB81-855165 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Computer Controlled Forging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
William V. Sassi. Jun 80, 19p NERACEI NT0296
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography describe the latest developments in computer aided, and computer controlled forging. Also included is a discussion of computer aided process design and simulation for forging. (Contains 011 citations.)

PB81-855173 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 74-May 80,
William V. Sassi. Jul 80, 60p NERACIAANT0304
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography describe the techniques and materials used in brazing and soldering aluminum. Also included is a description of the use of electron beam brazing and ultrasonic welding of aluminum. (Contains 085 citations.)

PB81-855231 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Magnetic Separation of Materials. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
T. David Kennedy. Jun 80, 43p NERACEI NT0336
Sponsored by National Technical Information Service, Springfield, VA.

This bibliography covers the design, development and testing of equipment which used magnetism as a means of separating magnetic materials from nonmagnetic materials. This technology is used extensively in cleaning fossil fuels, separating particles from fly ash, scrap metal recovery, beneficiation of various ores, and in processing municipal and other wastes. The articles presented describe various operating systems, separating techniques, and high-gradient magnetic separation which can be used with certain metal oxides and other paramagnetic materials. (Contains 36 citations.)

PB81-855249 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Magnetic Separation of Materials. June, 1976-May, 1980 (Citations from the Energy Data Base).
Rept. for Jun 76-May 80,
T. David Kennedy. Jun 80, 168p
NERACEDBNT0336
Sponsored by National Technical Information Service, Springfield, VA.

This bibliography covers the design, development and testing of equipment which used magnetism as a means of separating magnetic materials from nonmagnetic materials. This technology is used extensively in cleaning fossil fuels, separating particles from fly ash, scrap metal recovery, beneficiation of various ores, and in processing municipal and other wastes. The articles presented contain progress reports, design and performance data, and other information on both dry and fluid systems. As the source of these articles is the Energy Data Base, the vast majority relate to coal as a fossil fuel, from its initial processing to fly ash separation. Much of this information and other articles relate to magnetic separation technology in other industries. (Contains 125 citations.)

PB81-855298 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Encapsulation of Electronic Circuits. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Lawrence H. Marcus. Aug 80, 185p NERACEI NT0390
Sponsored by National Technical Information Service, Springfield, VA.

Reports are cited which deal with encapsulating electronic circuits, including microcircuits, integrated circuits, semiconductors, and solar cells. Dialectric properties and reliabilities of the encapsulating materials, such as epoxy and polyesters, are also discussed. (Contains 200 citations.)

PB81-855330 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Hot Stamping. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
William V. Sassi. Aug 80, 41p NERACEI NT0431
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography describe the techniques and various applications of hot stamping. Among the applications listed are: hot ironing of titanium alloy sheet shapes, hot stamping of exterior automotive plastic parts, and hot stamping of foil finishing of plastic structural forms. (Contains 037 citations.)

PB81-855389 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Anodizing Aluminum. January, 1969-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 69-Jun 80,
William V. Sassi. Aug 80, 176p NERACEI NT0485
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography discuss the processes involving the anodizing of aluminum, as well as color anodized aluminum. Also included is duplex sealing and bulk anodizing. (Contains 200 citations.)

PB81-855439 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Isostatic Pressing. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jun 74-May 80,
Walter Van Put. Jun 80, 43p NERACIAANT0654
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on isostatic pressing of large or small parts, using powder metals, alloys, titanium alloys, hard metals, and high performance metals. The influence of isostatic hot pressing on the mechanical and physical properties of the metals is also discussed. (Contains 034 citations.)

PB81-855454 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Sheet Metal Forming. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 74-May 80,
Walter Van Put. Aug 80, 66p NERACIAANT0669
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover information on investigations and applications of various sheet forming techniques, using different metals and alloys. Cutting, joining, and lubricants in metal forming are also included. (Contains 050 citations.)

PB81-855553 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
William V. Sassi. Jun 80, 153p NERACEI NT0859
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography describe the methods and machinery used in the handling, assembly, and fabrication of manufacturing and production materials. (Contains 169 citations.)

13I. Machinery and Tools

AD-A092 365/6 PC **A05**/MF **A01**
Cold Regions Research and Engineering Lab., Hanover, NH.
Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
Malcolm Mellor. Sep 80, 95p Rept no. CRREL-80-21
See also Part 6, AD-A045 127.

This report deals with the cutting of rock and other brittle materials by means of indentation tools. The principles of identation cutters are dealt with at length, the coverage including elastic contact stresses for initial loading by various types of indenters, application of formal plasticity theory to penetration analysis, and a variety of theories and penetration analyses that are not based on plasticity theory. Practical indentation mechanisms are described, and theoretical analyses are given for the dynamics and energetics of various types of roller cutters. The final section reviews experimental investigations and results for rock-cutting discs, giving a systematic summary of available data. (Author)

AD-A092 400/1 PC **A05**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Application of Numerical Optimization to Drive Shaft Design.
Master's thesis,
Virgilio S. Merced. Jun 80, 85p

The application of numerical optimization techniques to the design of drive shafts is demonstrated. The analysis investigated the effects of a small mass imbalance in conjunction with the rotation of a shaft with synchronous whirl. (Author)

PATENT-4 162 813
Not available NTIS
Department of Energy, Washington, DC.
Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
Patent,
D. N. Mashburn, H. C. Woodall, and R. R. Wright.
Filed 15 Mar 76, patented 31 Jul 79, 4p PAT-APPL-666 533
Supersedes PAT-APPL-666 533-76.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

This invention relates to a novel machine element characterized by mutually rubbing surfaces which are composed of dissimilar materials having high hardness, a low coefficient of friction, and resistance to corrosion by halogen-containing atmospheres. As exemplified by the preferred embodiment for use in gaseous UF sub 6 , the rubbing surfaces are chemically deposited nickel and anodized aluminum. These surfaces permit jam-free operation despite long-term exposure to UF sub 6 . Preferably, both surfaces have a hardness of at least about 500 HV sub 100 on the Vickers hardness scale, and preferably the anodized-aluminum surface is of type having comparatively little tendency to sorb uranium hexafluoride. (ERA citation 06:000264)

PB81-855371 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.

Packaging Machines. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
William V. Sassi. Aug 80, 62p NERACEI NT0473
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography describe the design and applications of processing and packaging machinery and equipment. An analysis of United States and foreign made packaging equipment is also included. (Contains 067 citations.)

UCRL-52960-3 PC **A19**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Technology of Machine Tools. Volume 3. Machine Tool Mechanics.
J. Tlusty. Oct 80, 441p
Contract W-7405-ENG-48

The Machine Tool Task Force (MTTF) was formed to characterize the state of the art of machine tool technology and to identify promising future directions of this technology. This volume is one of a five-volume series that presents the MTTF findings; reports on various areas of the technology were contributed by experts in those areas. (ERA citation 06:001176)

13J. Marine Engineering

AD-A091 890/4 PC **A02**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Ship Performance Dept.
Dynamic Hull and Propeller Interaction Factors for FF-1052 Predicted from Quasi-Steady Model Experiments.
Final rept.,
Hugh Y. H. Yeh, and Kenneth D. Remmers. Oct 80, 20p Rept no. DTNSRDC/SPD-0719-01

This report presents the dynamic hull and propeller interaction factors for the FF-1052 Class fitted with a controllable pitch propeller. These factors are to be used in a digital-computer propulsion dynamics-simulation program. The results in this report were obtained from quasi-steady model experiments performed in September 1975. A systematic series of curves were generated from the experimental data showing the behavior of wake and thrust deduction factors as a function of pitch ratio. Such data have not previously been published. (Author)

AD-A091 909/2 PC **A03**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD.
Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
Research and development rept.,
Nathan T. Sides, and Thomas L. Daugherty. Sep 80, 46p Rept no. DTNSRDC-80/101

This report presents frictional performance of oil-lubricated thrust bearings of conventional tilt-pad and swing-pad designs. Results from the conventional tilt-pad bearing are used as a baseline. All tests were conducted at a fixed speed and temperature, while load was varied. All bearings were tested with the pad surfaces in the centered and off-centered positions. Friction results in the hydrodynamic region compared favorably with conventional hydrodynamic theory. The hydrodynamic load capacities of the centered swing-pad bearing designs were 25 to 80 percent higher than that of the centered tilt-pad bearing. Improvements in performance were observed in the regions of hydrodynamic and mixed lubrication by off-setting the pad surfaces for both the tilt-pad and the elastomeric swing-pad designs. Breakaway friction of the laminated elastomeric swing-pad design was about 50 percent higher than that measured for either the conventional tilt-pad or hybrid-pad bearing designs. (Author)

AD-A091 940/7 PC **A03**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Ship Performance Dept.
Correlation of Model Experiments with Ship Powering Data for Three Tankers Represented by Models 9006, 9007, 9008, and 9009.
Final rept.,
W. G. Day. Oct 80, 44p Rept no. DTNSRDC/SPD-0851-01

Powering data from trials of three tankers have been correlated with predictions from experiments with four models, (one of the tankers being represented by two models of varying size). The correlation allowance ranged from -0.00015 to -0.0004. This range of correlation allowance is lower than anticipated, but is in agreement with an apparent trend of negative correlation allowances for modern tankers over 300 meters in length.

AD-A091 948/0 PC **A09**/MF **A01**
Naval Sea Systems Command, Washington, DC.
SES Multi-Purpose Ship Study. Transport Application. Volume 1. Technical Summary.
Technical rept.
Jul 80, 195p

This report describes the MULTI-PURPOSE SHIP (MPS) and its application in Military Transport. The study report contains two volumes: Volume I includes 8 sections. Section 1 presents a brief introduction; Section 2 summarizes the MPS point design characteristics; Section 3 describes the ship's performance; Section 4 compresses descriptions of all the ship's subsystems in a concise narrative form with supporting illustrations; Section 5 delineates the ship's crew and functions; Section 6 analyzes the compatibility between the stowage and handling requirements of the payload and the various options available in the selection of primary ship proportions and design features; Section 7 highlights the significant conclusion resulting from the study effort; and Section 8 presents the technical appendices supporting the MPS point design.

AD-A092 133/8 PC **A03**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Ship Performance Dept.
Documentation for an Improved Version of HULIMP, A Ship Hull Improvement Computer Program Based on the Baba Theory.
Final rept.,
Steven C. Fisher. Oct 80, 44p Rept no. DTNSRDC/SPD-0820-03

The revision to an existing computer program which implements wave pattern analysis to improve a ship hull form is described. The revision allows predictions of the change in wave resistance due to adding a given ship to a basic hull form. The instructions on program usage are included. (Author)

AD-A092 158/5 PC **A04**/MF **A01**
Transportation Systems Center, Cambridge, MA.
Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
Final rept. Oct 78-Sep 79,
D. B. Devoe, J. W. Royal, and C. N. Abernethy. Sep 80, 68p TSC-USCG-80-1, USCG-D-54-80

A technique for computer simulation of operations of U.S. Coast Guard Vessel Traffic Services is described and verified with data obtained in four field studies. Uses of the technique are discussed and illustrated. A field experiment is described in which Vessel Traffic Service watchstanders were tested in simulated operations at traffic loads well in excess of routine levels. The strategies adopted are identified and discussed with regard to their implications for operating procedures and appropriate recommendations are offered. (Author)

AD-A092 246/8 PC **A10**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Ship Performance Dept.
Analysis of Wake Survey Experimental Data for Model 5365 Representing the R/V ATHENA in the DTNSRDC Towing Tank.
Final rept.,
Rae B. Hurwitz, and L. Bruce Crook. Oct 80, 223p Rept no. DTNSRDC/SPD-0833-04

A series of wake survey experiments were conducted on Model 5365 representing the R/V ATHENA in the DTNSRDC towing tank. Longitudinal, tangential, and radial velocity components for experiments at model speeds of 2.87 knots (1.48 m/s), 5.22 knots (2.68 m/s), 6.96 knots (3.58 m/s), and 13.5 knots (6.94 m/s) are presented. Several comparisons are made between wake surveys with different water depths, trims, and speeds. A comparison of full-scale and model-scale towing tank wake survey measurements is also presented. Harmonic analyses of the circumferential distribution of the velocity component ratios were performed on the model experimental data and the results are reported herein.

AD-A092 353/2 MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Ship Performance Dept.
An Investigation of Appendage Drag,
Marc P. Lasky. Oct 80, 60p Rept no. DTNSRDC-SPD-458-01
Availability: Microfiche copies only.

The purpose of this report is to provide information about the resistance, interaction and scaling of appendages. A calculation procedure is developed that can be used to compute the Reynolds number dependent components of appendage drag. A correlation is made between the calculated values of drag and data obtained from bare hull and appended ship-model resistance tests. This correlation indicates that the mathematical model is an effective means of predicting the viscous drag of appendages and that the added drag due to pressure as well as interaction between appendages and the hull form is of a small order of magnitude. (Author)

AD-A092 374/8 PC **A04**/MF **A01**
Naval Ocean Systems Center, San Diego, CA.
Advanced Ship System Concepts for Hydrographic Surveying.
Final rept. for FY 79,
D. W. Murphy, and W. S. Morinaga. Sep 80, 73p Rept no. NOSC/TN-577

An investigation is reported of advanced ship systems concepts for conducting the hydrographic survey mission of the Defense Mapping Agency. Advanced concepts for improving the survey rate and reducing the operating costs are discussed. (Author)

AD-A092 392/0 PC **A15**/MF **A01**
Naval Air Engineering Center, Lakehurst, NJ. Engineering Dept. (SI).
Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16,
David H. Jewell, and Michael A. Strano. 2 Oct 80, 349p Rept no. NAEC-ENG-6703-REV-16
See also Revision 15, AD-A076 443.

This report is a compilation of data covering aircraft servicing facilities aboard aviation and amphibious aviation ships. Data is furnished on aircraft servicing facilities relating to fueling and defueling, electrical starting and servicing, oxygen and nitrogen, aircraft inertial alignment, compressed air, and cooling and starting air. (Author)

AD-A092 431/6 PC **A02**/MF **A01**
Iowa Inst. of Hydraulic Research, Iowa City.
Ship Centerplane Source Distribution,
T. Miloh, and L. Landweber. 6 Jul 78, 16p
Contract N00014-76-C-0012
Pub. in Jnl. of Ship Research, v24 n1 p8-23 Mar 80.

No abstract available.

AD-A092 449/8 PC **A06**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Ship Performance Dept.
Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
Final rept.,
Rae B. Hurwitz. Nov 80, 119p Rept no. DTNSRDC/SPD-693-02

This work describes the development of a technique for predicting the propulsion coefficients from hull-form parameters. The two propulsive coefficients used at DTNSRDC and included i nthis study are the thrust-deducation fraction (t) and the

thrust-wake fraction (wT). A prediction method has been derived from data on sixty-five experiments on model hulls representing a variaty of twin-screw destroyers. Examples show that the prediction models provide fair results within the range of data represented. Additional work is recommended to develop an improved prediction method. (Author)

AD-A092 454/8 PC **A04**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Ship Performance Dept.
Documentation for the Ship Hydrostatics Computer Program HYDRO.
Final rept.,
Steven C. Fisher. Oct 80, 61p Rept no. DTNSRDC/SPD-0965-01

The computer program HYDRO, a hydrostatics program using cubic parametric splines for curve fitting, is presented. Program documentation and the instructions on program usage are included. Previously at DTNSRDC, a complete hydrostatic analysis of a given hull form required the execution of three separate computer programs. In an effort to consolidate and improve these programs, a new computer program, HYDRO, was written. Because the number of programs has been reduced to one, the time required to complete the analysis has been shortened. The original programs used the trapazoidal rule for calculating the sectional areas and volumes. HYDRO uses parametric splines to define the hull shape to allow exact integration, which improves the accuracy of the results.

AD-A092 474/6 PC **A03**/MF **A01**
Science Applications, Inc., La Jolla, CA.
Program Manual NSUP.
Final rept. Dec 77-Sep 80,
Richard B. Chapman. Sep 80, 35p
Contract N00014-78-C-0111
See also Rept. no. SAI-462-80-560-LJ, AD-A092 475.

This program computes forces and moments and the free surface disturbance generated by an arbitrary three-dimensional ship hull with arbitrary linearized motions. Forward speed is included under the assumption that the flow generated by forward speed can be linearized as well. (Author)

AD-A092 475/3 PC **A03**/MF **A01**
Science Applications, Inc., La Jolla, CA.
Time-Domain Method for Computing Forces and Moments Acting on Three Dimensional Surface-Piercing Ship Hulls with Forward Speed.
Final rept. 15 Dec 77-30 Sep 80,
Richard B. Chapman. Sep 80, 40p Rept no. SAI-462-80-560-LJ
Contract N00014-78-C-0111
See also AD-A092 474.

A time-domain simulation method for computing forces and moments acting on an arbitrary surface-piercing three-dimensional ship hull is presented. Arbitrary motions can be prescribed and are assumed to be sufficiently small so that the linearized method is valid. Forward speed effects are included under the assumption that the disturbance generated by forward motion is also small and interactions with the flow generated by the prescribed motions are of second order. The hull is represented by a set of quadrilateral surface panels in a body-fixed system, while the free surface is represented by its spectral coordinates in a space-fixed rectangular system. Small time steps are used to advance the flow. This time-domain computation can also be applied to compute linearized seakeeping responses in the frequency domain. For each degree of freedom, a unit step function is applied to the velocity. The resulting impulsive forces and moments and the computed time histories of these forces and moments after the step in velocity can then be combined to compute the added mass and damping forces and moments in the frequency domain. Wave-excited forces can be computed by similar method. As a check on the computer program, the added mass and damping of a semi-submerged sphere oscillating in heave were computed numerically. The results show good agreement with analytic mass and damping coefficients for a fairly coarse representation of the hull and free surface. (Author)

AD-B018 764/1 PC **A04**/MF **A01**
David W Taylor Naval Ship Research and Development Center Bethesda MD Central Instrumentation Dept
Infrared Thermometry and the Telatemp 44 as a Ship System Maintenance Monitoring Tool.
Departmental rept.,
Barry L. Zimmerman. May 77, 71p Rept no. CID-77-2
Distribution limitation now removed.

Results of a laboratory investigation have demonstrated that infrared thermometry is a promising technique for measuring surface temperatures of Navy shipboard equipment and systems. Certain problems are encountered when applying the technique. These problems in general are discussed. A specific infrared device, the Teletemp Corp. Model 44, was evaluated. It substantially meets all its advertised specifications and with certain recommended modifications, should prove a valuable tool for shipboard thermometry. (Author)

AD-B033 624/8 PC **A08**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD. Ship Performance Dept.
Program PHFMOPT, Planing Hull Feasibility Model, User's Manual.
Final rept.,
E. Nadine Hubble. Dec 78, 171p Rept no. DTNSRDC/SPD-0840-01
Distribution limitation now removed.

Documentation of a computer program for performing design feasibility studies of planing hulls is presented. The mathematical model is oriented to combatant craft but may also be applied to other types of planing ships with full-load displacement up to 1500 tons and speed-displacement coefficient (volume Froude number) up to 4. Options are available for structural materials of aluminum or steel or glass reinforced plastic, diesel or gas turbine prime movers with or without auxiliary engines of either type, and propellers on inclined shaft or waterjet pumps. Weight, volume, and vertical center of gravity for the major ship components, including loads, are estimated. Hull size may either be fixed or optimized to meet design payload requirements. (Author)

PB81-850232 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Foundation Piles for Marine Platforms. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Sep 80,
Robert R. Hippler. Sep 80, 269p NERACEI NT1710
Sponsored by National Technical Information Service, Springfield, VA.

This bibliography covers worldwide literature on the design, installation, and certification of piles for marine foundations. Foundations include offshore platforms, piers, and approach and in-river bridge supports. The articles address natural forces on piles, including wave, tidal, ice, and seismic forces and the behavior of the piles in various bottom soils. Analytical and test reports cite bearing capacity and horizontal stiffness. Special subjects include underwater pile driving, and coatings for insertion friction and protection and endurance of the piling. (Contains 300 citations.)

PB81-855082 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Howard L. Ogushwitz. Jun 80, 37p NERACEI NT0241
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography describe the design, development, classification, and construction of various types of submersible and semisubmersible vessels. (Contains 029 citations.)

13K. Pumps, Filters, Pipes, Fittings, Tubing and Valves

AD-A092 011/6 PC **A03**/MF **A01**
Harry Diamond Labs., Adelphi, MD.
Two-Stage Servovalve Development Using a First-Stage Fluidic Amplifier.
Technical memo.,
Richard Deadwyler. Jul 80, 50p Rept no. HDL-TM-80-21

This study of first-stage fluidic amplifier usage to date in two-stage servovalves compares first-stage hydraulic amplifiers (torque motor, flapper-nozzle valve) and first-stage fluidic amplifier. Present trends in fluidic servovalve development are also discussed. (Author)

CONF-801090-2 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
J. R. Horton, W. R. Gambill, W. R. Williams, and B. T. Thompson, Jr. 1980, 30p
Contract W-7405-ENG-26
Critical equipment workshop, Huntington, WV, USA, 1 Oct 1980.

Summaries of reports presented at a workshop on Critical Coal Conversion Equipment held in Huntington, WV, on October 1-3, 1980 are included. Titles of the papers are: a State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications; A State-of-the-Art Assessment of Heat Transfer Equipment; a State-of-the-Art Assessment of Compressors, Expanders, and Hot-Gas Cleanup Equipment; and a State-of-the-Art Assessment of Coal Feeding for Coal Conversion Plants. (ERA citation 06:000025)

GA-A-16071 PC **A02**/MF **A01**
General Atomic Co., San Diego, CA.
Vacuum Pumping Concepts for ETF.
W. G. Homeyer. Sep 80, 10p CONF-801011-31
Contract AT03-76ET51011
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

The Engineering Test Facility (ETF) poses unique vacuum pumping requirements due to its large size and long burn characteristics. These requirements include torus vacuum pumping initially and between burns and pumping of neutralized gas from divertor collector chambers. It was found that the requirements could be met by compound cryopumps in which molecular sieve 5A is used as the cryosorbent. The pumps, ducts, and vacuum valves required are large but fit with other ETF components and do not require major advances in vacuum pumping technology. Several additional design, analytical, and experimental studies were identified as needed to optimize designs and provide better design definition for the ETF vacuum pumping systems. (ERA citation 06:001742)

PB81-122533 PC **A06**/MF **A01**
Weidlinger Associates, New York.
Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
Grant rept. no. 14,
Ivan Nelson, Paul Weidlinger, and Melvin L. Baron. Oct 79, 106p NSF/RA-790528
Grant NSF/PFR78-15049

The dynamic axial response of long segmented pipelines induced by incoherent seismic ground motion in inhomogeneous soil conditions is reported. Seismic response of pipeline 'lifelines' is important because of the potential grave consequences of an earthquake disruption of vital services. Results indicate that, in general, a local inhomogeneity may contribute to a change in pipe response in three different ways: (1) a local variation in delay time in the case of wave propagation; (2) a variation in the free field waveform at adjacent segments caused by inhomogeneity; and (3) a variation in soil stiffness from soft to firm material. All three effects generally occur simultaneously. Changes in the phase delay are not significant. Large amplifications in pipe response, relative to the homogeneous case, can occur when the incoherent component of the input ground motion is large. For a two degree of freedom system, a local

change in soil stiffness can cause a large increase in pipe response, even for a coherent ground input. A two degree of freedom system appears to be a reasonable model for the behavior of a multisegment system.

PB81-855462 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Solenoid Valves. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
Walter Van Put. Jun 80, 28p NERACEI NT0680
Sponsored by National Technical Information Service, Springfield, VA.

Research reports from global sources are cited covering the applications of solenoid valves in the nuclear industry, solar hearing, fuel control, carburetors, air intake of combustion engines, and pressure systems. Articles on failures of the solenoid valves are also included. (Contains 025 citations.)

13L. Safety Engineering

AD-A092 016/5 PC **A05**/MF **A01**
Federal Aviation Administration, Washington, DC. Office of Aviation Safety.
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
Final rept. 26 Jun 78-26 Jun 80,
J. H. Enders, and E. C. Wood. 26 Jun 80, 86p
Rept no. FAA-ASF-80-4-VOL-1

The Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee and its technical supporting groups spent nearly 13 months from May 1979 through June 1980 examining the factors affecting the ability of the aircraft cabin occupant to survive in the post-crash fire environment and the range of solutions available. Having only a limited amount of time available, the Committee confined its examination to large transport category aircraft, reasoning that recommendations developed could provide the necessary guidance for the FAA to address the broader spectrum of airplane and rotorcraft fire safety improvement. During the course of this assignment, certain topics that were outside the scope of the Committee, yet have some bearing on aircraft fire in general, were identified but not discussed by the Committee. Some of these topics were felt to be worthy of further examination by the FAA or by some other body of advisors constituted for that purpose. These topics are not addressed in this report. Presentations were made to the SAFER Committee by Committee members, technical supporting groups, the FAA, citizens and private firms. The broadly-constituted body of information developed and presented to the Committee formed the basis for Committee Findings and Recommendations. The Committee focused its recommendations on solutions or interim improvements. (Author)

PB81-124679 PC **A20**/MF **A01**
Michigan Univ., Ann Arbor. Highway Safety Research Inst.
Statistical Analysis of the National Crash Severity Study Data.
Final rept. May 78-Aug 80,
Phyllis A. Gimotty, Kenneth L. Campbell, Thipatai Chirachavala, Oliver Carsten, and James O'Day. Aug 80, 475p UM-HSRI-80-38, DOT-HS-805 561
Contract DOT-HS-8-01944

This is the Final Report on a two-year statistical analysis of the data collected in the National Crash severity and the crash conditions. Statistical models were developed to relate the probability of a severe injury to independent variables such as Delta V (the instantaneous change in velocity of the vehicle) and Occupant Age. Models were developed separately for various subsets of front and side impacts. Various clinical studies which were reported separately, are summarized in this report. These studies address the existing literature, side impacts, lower extremity injuries, eye injuries, and neck injuries. The application of the NCSS data to accident analysis models, which estimate the benefits of improved occupant protection systems, is also discussed.

PB81-130775 PC **A04**/MF **A01**
Statens Vaeg- och Trafikinstitut, Linkoeping (Sweden).
Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas),
Hans-Ake Cedersund. 1979, 54p VTI/MEDDELANDE-172
Text in Swedish. Summary in English. Also pub. as ISSN-0347-6049.

The investigation comprises police-reported accidents in 1975 and 1976. Data on accident frequency, distribution on accident type, number of injured and accidents consequence has been provided for each junction and road stretches between junctions. Traffic flow data have been obtained from local authority counts. As measures of traffic safety accident rate, number of accidents per million kilometers of pair of axles, and injury rate, number of injured and killed per million kilometers of pair of axles, have been used. The report also presents a method for the calculation of accident rate on short stretches in urban areas.

PB81-138067 PC **A03**/MF **A01**
National Weather Service, Salt Lake City, UT. Western Region.
Arizona Floods of September 5 and 6, 1970. A Report to the Administrator.
Jul 71, 50p NOAA-NDSR-70-2, NOAA-79100903

The unprecedented flash floods in the central mountains of Arizona Saturday afternoon and evening, September 5, 1970, transformed a week-end camping holiday into a nightmarish tragedy for many persons. This report describes the meteorological conditions that caused the natural disaster and evaluates the adequacy and effectiveness of the National Weather Service relative to the disaster and improvements needed to better cope with future disasters of similar scope.

PB81-855256 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Fire Detection and Extinguishment. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jun 74-May 80,
William V. Sassi. Jun 80, 36p NERACIAANT0357
Sponsored by National Technical Information Service, Springfield, VA.

Articles cited in this bibliography discuss the methods and equipment used in the detection and extinguishing of fires. The applications of these techniques to aviation and spacecraft are included. (Contains 027 citations.)

13M. Structural Engineering

AD-A092 210/4 PC **A07**/MF **A01**
Swanson Service Corp., Huntington Beach, CA.
Evaluation of the NASTRAN General Purpose Computer Program.
Final rept.,
J. W. Jones, H. H. Fong, and D. A. Blehm. Aug 80, 137p Rept no. SSC-81980
Contract N00014-79-c-0576

NASTRAN is a large, general purpose, finite element computer program used primarily for linear structural analysis. In its ten years of existence, NASTRAN has achieved the distinction of being the program with the most users worldwide, most documentation, most user conferences, most cited, and probably the most expensive to develop. The four objectives of this study were to: (1) assess the current status (usage, documentation, trends) of public-domain versions of NASTRAN; (2) evaluate its program architecture, and compare it with some other general purpose codes; (3) survey its functional description, and comment on its capabilities/limitations and such items as matrix operations, eigenvalue extraction schemes, element library, material properties, etc; and (4) perform advanced evaluation exercises on some selected structural elements, and test their convergence, completeness, and efficiency.

PB81-120057 PC **A04**/MF **A01**
Stanford Univ., CA. John A. Blume Earthquake Engineering Center.
Risk and Public Policy.
Technical rept.,
Marie-Elisabeth Pate. Jul 79, 60p 37, NSF/RA-790547
Grant NSF-ENV77-17834

Seismic risks are considered for which public authorities have all or part of the decisionmaking power to define collective interests and mitigate or control the level of exposure. The objective is to deal consistently with risks in a given philosophical framework in order to compare them and to allocate public funds for risk mitigation in an equitable and efficient way. The problem of 'risk' is formulated and defined Risk is measured with respect to the problem of consequential rare events, the density of risk, the choice of random variables in analysis and evaluation, and the perception and acceptance of seismic risk. Economic issues associated with risk in public policy such as the social rate of discount, economic life under uncertainty, and capital immobilization for the mitigation of risks are discussed. An investigation of priorities and life saving methods are reviewed. The problem of warnings and alerts is studied from the standpoint of warnings as a crisis situation, warnings and socio-economic structure, and the liability question.

PB81-122301 PC **A03**/MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.
A Response Spectrum Method for Random Vibrations,
Armen Der Kiureghian. Jun 80, 49p UCB/EERC-80/15, NSF/RA-800201
Grant NSF-ENG79-05906

A response spectrum method for stationary random vibration analysis of linear structures is developed. The method is based on the assumption that the input excitation is a wide-band stationary Gaussian process and the response is also stationary. However, it can also be used as a good approximation for the response to a transient stationary Gaussian input with a duration several times longer than the fundamental period of the structure. Various response quantities, including the mean-squares of the response and its time derivative, the response mean frequency, and the cumulative distribution and the mean and variance of the peak response are obtained in terms of the ordinates of the mean response spectrum of the input excitation and the modal properties of the structure. The formulation includes the cross-correlation between modal responses, which are shown to be significant for modes with closely spaced natural frequencies. The proposed procedure is demonstrated for an example structure that is subjected to earthquake induced base excitations. Computed results based on the response spectrum method are in close agreement with simulation results obtained from time-history dynamic analysis. The significance of closely spaced modes and the error associated with a conventional method neglects the modal correlations are also demonstrated through this example.

PB81-122509 PC **A05**/MF **A01**
Foras Forbartha, Dublin (Ireland).
Dimensional Co-ordination in Building (Comhordu Toiseach.san bhFoirgniocht).
Jul 76, 86p
Proceedings of a Symposium Held at Gresham Hotel, Dublin, Ireland on August 26, 1975.

Contents: Dimensional coordination in Ireland; Dimensional coordination: The international view; Dimensional coordination: Design discipline; and Dimensional coordination: The private practice.

PB81-122863 PC **A03**/MF **A01**
Swedish Council for Building Research, Stockholm.
Deformation Limits for Roofs and Walls of Profiled Sheeting,
Lennart Douhan. 1980, 49p ISBN-91-540-2981-3, D32:1980

The object of this report is to provide information on current deformation limits for roofs and walls of profiled sheeting in Sweden and abroad, and to try

and elucidate the effect of deformations on the performance of these structures.

PB81-122871 PC **A05**/MF **A01**
Swedish Council for Building Research, Stockholm.
Optimal Distribution of Thermal Insulation and Ground Heat Losses,
Johan Claesson, and Bengt Eftring. 1980, 98p
ISBN-91-540-3321-7, D33:1980

The purpose of thermal insulation of buildings and other constructions, which maintain a temperature different from the surroundings, is to decrease the inevitable heat loss. A layer of insulation material is, wherever it is feasible, placed along the boundary of the construction. A lot of systems for interseasonal storage of sensible heat in a large ground volume have been proposed and contemplated during the last years of energy crisis. A considerable thermal insulation against heat losses to the ground surface and the surrounding ground is usually necessary. The amount of insulation material may become an economically important factor for the system. Then it is valuable to know how to distribute the insulation in an optimal way.

PB81-124877 PC **A06**/MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.
General Applicability of a Nonlinear Model of a One Story Steel Frame,
Bjorn Ingi Sveinsson, and Hugh D. McNiven. May 80, 116p UCB/EERC-80/10, NSF/RA-800196
Grant NSF-PFR79-08257

This report deals with the question of whether a nonlinear mathematical model of a structure constructed using system identification and the nonlinear structural response to one particular earthquake excitation, can satisfactorily predict the nonlinear responses of the same structure to other earthquake excitations. The structure is a single story steel frame, and the study consists of both experimental and analytical parts. The physical structure is subjected to four historical strong motion earthquake acceleration time histories by means of the shaking table at the Earthquake Engineering Research Center of the University of California, Berkeley, California. The analytical part consists of constructing a mathematical model of the structure. The form of the model is the same as that adopted by Matzen and McNiven. It accommodates viscous damping and nonlinear material behavior by means of the Ramberg-Osgood equations. The parameters in the model (there are four) are established from the responses to the El Centro earthquake. With the mathematical model complete, responses to the El Centro, Pacoima, Taft and Parkfield Earthquakes are predicted using the model. These responses are compared to the corresponding responses from the experimental program. The significant finding from the study is that the mathematical model, constructed using response data from the El Centro earthquake, predicts responses to the other three earthquakes as accurately as it does to the El Centro. The shortcoming of the model, equally evident in its prediction of all four earthquakes, is its inability to predict displacement time histories, following the first major excursion into the plastic deformation domain. The authors indulge in the luxury of accounting for the weakness and suggest ways for overcoming it, with the price attached.

PB81-124885 PC **A10**/MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.
Cyclic Inelastic Buckling of Tubular Steel Braces,
Victor A. Zayas, Egor P. Popov, and Stephen A. Mahin. Jun 80, 204p UCB/EERC-80/16, NSF/RA-800209
Grants NSF-ENV76-04263, NSF-PFR79-08984

Experimental results are presented from tests on six individual brace members subjected to severe inelastic cyclic loading. The tubular brace specimens considered are one-sixth scale models of braces of the type used for offshore platforms. Each brace specimen is alternatively subjected to cycles of compressive inelastic buckling followed by tensile stretching. Examined are the effects resulting from different end fixity conditions (pinned vs. fixed), and from different diameter-to-wall thickness ratios (33 vs. 48). Also, the behaviors of heat treated braces are compared to the behavior of braces made from tubing as received from the manufacturer. The inelastic responses of the braces are presented and interpreted, including axial load-axial displacement hysteretic loops; axial load-midspan lateral deflection hysteretic loops; brace deflected shapes; brace energy dissipation; and inelastic axial strains, curvatures and rotations in plastic regions. Special attention is directed to the deterioration of buckling load with inelastic cycling. Design code buckling formulas are for columns or braces that have not been previously yielded and have initial cambers within the code allowances. Cyclic inelastic loadings cause changes in the mechanical material properties of the braces which subsequently reduces the buckling load. A method of predicting the reduction in buckling load is presented. The changes in material properties are identified for a 'critical section' within the plastic hinge of a brace and the reduced buckling loads under repeated cyclic loadings are calculated.

PB81-139222 PC **A07**/MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.
Strength of Timber Roof Connections Subjected to Cyclic Loads,
Polat Gulkan, Ronald L. Mayes, and Ray W. Clough. Sep 78, 137p UCB/EERC-78/17, HUD-0001491
Contract HUD-H-2387

The investigations described in this report examined the adequacy of typical timber roof connections used in masonry housing construction in resisting forces developed during earthquake ground motions in the less seismically active areas of the United States. Displacement controlled load tests using both in - plane and out - of - plane forces were performed on five basic types of roof - to - masonry wall connection mockups comprising a total of 19 models. The five types of connections contained load - bearing and nonload - bearing connection details of both gabled truss and flat roof construction. Test results indicated that the connection of the truss rafters to bearing and nonbearing walls was adequate. However, supplementary anchorage devices need to be used for connections employing ledgers, since bolts tend to fail by pulling out of the face shell of the masonry units and ledgers fail easily when subjected to cross grain tension. Graphs, drawings, and photographs are used throughout the report and a total of 19 references are provided. (Author abstract modified).

PB81-850240 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Foundation Piles for Land Construction. December, 1976-September, 1980 (Citations from the Engineering Index Data Base).
Rept. for Dec 76-Sep 80,
Robert R. Hippler. Sep 80, 272p NERACEI NT1709
Sponsored by National Technical Information Service, Springfield, VA.

This bibliography covers worldwide literature on the design, analysis and installation of piles for foundations on land. The articles address forces and stresses on piles during driving and under loaded conditions. Stresses also include those arising from earthquakes. Special subjects include techniques to overcome driving resistance, such as coating and pre-boring. (Contains 300 citations.)

[redacted]

14.

METHODS AND EQUIPMENT

14B. Laboratories, Test Facilities, and Test Equipment

AD-A092 041/3 MF **A01**
Block Engineering, Inc., Cambridge, MA.
Laser Transmissometer, Installation, Alignment and Instruction Manual.
Final rept.
Jul 78, 148p Rept no. BEI-78-M03
Availability: Microfiche copies only.

The laser transmissometer described herein has been built for making continuous precision atmospheric transmission measurements at three laser wavelengths over an extended period of time. (Author)

AD-A092 069/4 PC **A03**/MF **A01**
McDonnell Douglas Astronautics Co.-West, Huntington Beach, CA.
Gasdynamic Particle Accelerators - An Optimization,
E. Migotsky. Mar 73, 35p Rept no. MDC-G4163

The problem of determining the streamwise variation of gas stream velocity in a nozzle such that the acceleration of particles within the gas stream is everywhere a maximum has been reduced to a quadrature when the following parameters are constants: ratio of specific heats and stagnation conditions of the gas, mass, size, and drag coefficient of the particles. The quadratures have been evaluated for three values of the ratio of specific heats: 5/4, 7/5, and 5/3. The results indicate that a high-enthalpy, high-pressure plasma arc with an optimized nozzle appears to offer the possibility of significantly improved simulation of high heating rates simultaneously with high particle velocities and longer testing times required for advanced hypersonic vehicles. For example, assuming a particle drag coefficient of 1.0, a plasma arc with a stagnation enthalpy of 6,000 Btu/lbm and a stagnation pressure of 190 atmospheres may achieve particle velocities of 11,800 and 7,000 feet per second for particle diameters of 50 and 1,500 microns, respectively, with a 17.25 foot long optimized nozzle. (Author)

AD-A092 345/8 PC **A04**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
Plasma Dynamics of the Arc-Driven Rail Gun.
Technical rept.,
John D. Powell, and Jad H. Batteh. Sep 80, 63p
ARBRL-TR-02267, AD-E430 539

A model is analyzed to study the electromagnetic acceleration of particles using a rail gun. Current is conducted between the rails by a plasma arc which accelerates down the rails driving the projectile. The analysis includes determining the electromagnetic fields within the gun and solving the fluid-mechanical equations of the plasma under the assumption that the flow parameters are steady in a frame that accelerates with the arc. Specifically, a set of coupled equations is derived which, when solved, yields the properties of the arc and the acceleration of the projectile. A limiting-case analytic solution to the equations is found, and an iterative technique is employed to solve the equations numerically in the more general case. The results of the calculation are applied to analyze the arc in an experiment recently carried out by Rashleigh and Marshall. In addition, the properties of the arc appropriate for a larger rail

gun, such as proposed in a forthcoming experiment by Westinghouse, are investigated and some approximate scaling relations derived. The results of the calculations are compared with those of others and some suggestions for future investigations are given.

AD-A092 366/4 PC **A03**/MF **A01**
Arnold Engineering Development Center, Arnold AFS, TN.
Skin Friction Measurements at Transonic Mach Numbers.
Final rept.,
Charles L. Smith. Oct 79, 27p Rept no. AEDC-TSR-79-P62
Prepared in cooperation with ARO, Inc., Tullahoma, TN.

The skin friction of a body of revolution was determined from (1) embedded wire gage data and (2) the difference between balance-measured total drag and the integrated pressure force. Additional data were obtained from model mounted Preston tubes and boundary-layer rakes. The model was fixed at 0-deg angle of attack at Mach numbers from 0.6 to 1.5 and unit Reynolds numbers from 1.5 million/ft to 5.0 million/ft. (Author)

AD-A092 469/6 PC **A08**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
Master's thesis,
Michael Gresham Akin, Gerald Dwayne Nix, and Gordon Ross Jefferson. Sep 80, 167p Rept no. NPS-54-80-011

Every major command within the Department of Defense shares an acute interest in the cost effective utilization of research and development results in the field. The Naval Facilities Engineering Command's awareness of the frequently heard statement from the field, 'We tell the laboratory what is needed in the field; why don't they research it,' resulted in a long-range program to enhance the organization's transfer of technology. This thesis is an effort to determine the following: Is relevant information being received in the field. How much is received. Why is it not received. The thesis also measures the progress made by NAVFAC over the past decade and examines methods to increase the technology reception capacity of the users. The results of the study strongly indicate laboratory support has steadily improved during the past twelve years and the field organizations that utilize research results have a positive opinion of the laboratory and its research data. (Author)

AD-A092 478/7 PC **A08**/MF **A01**
Tactical Weapon Guidance and Control Information and Analysis Center, Chicago IL.
Evaluation of RF Anechoic Chamber Fire Protection Systems.
Final rept.,
Thomas E. Waterman, John A. Campbell, Larry D. Paarmann, Irving N. Mindel, and Charles W. Smoots. Jul 80, 170p GACIAC-SR-80-02, NWC-TP-6211, AD-E900 032
Contract DSA900-77-C-3840

The increasing use of microwave anechoic chambers plus several recent chamber fires was the impetus for this special study. The report identifies and collects in one document the various issues and problems associated with the fire protection of anechoic chambers. It also addresses the interfaces between personnel groups including the chamber designers, operators, maintenance and the fire department. It is not a design report; i.e., it does not contain enough detail to design either a chamber or the fire protection system. Instead, it presents the pros and cons of the various fire protection options available to the designers (smoke and heat detectors, alarm systems, sprinkler heads, preferred physical locations, fire suppressant agents, etc.) and relates these to the chamber operation. The report also identifies several areas where additional investigation is required such as detection of deep-seated combustion, testing of new more fire-resistant absorber materials, and analysis of the combustion products of halogen-type suppressants. An extensive list of references is included.

AD-A092 490/2 PC **A02**/MF **A01**
Wayne State Univ., Detroit, MI.
Scanning Photoacoustic Microscopy for Nondestructive Evaluation,
J. J. Pouch, R. L. Thomas, Y. H. Wong, J. Schuldies, and J. Srinivasan. 8 Aug 79, 4p ARO-15746.4-MS
Contract DAAG29-79-C-0151, Grant DAAG29-78-G-0182
Pub. in Jnl. of the Optical Society of America, v70 n5 p562-564 May 80.

No abstract available.

AD-C019 184/1 PC **A02**/MF **A01**
Royal Aircraft Establishment, Farnborough (England).
A New Angular Displacement Transducer.
Technical rept.,
B. L. Welsh. Feb 79, 21p RAE-TR-79026, DRIC-BR-68394
Distribution limitation now removed.

A miniature non-contacting displacement transducer is described, designed to measure the static and dynamic angular rotation of a shaft. The measurement technique uses a specially constructed fibre-optic probe, an infra-red light source and a receiver. Amplitude measurements within a 0 + or - 180 deg. range may be made for frequencies from 0-500 Hz. The transducer has continuous resolution, producing a voltage output related to instantaneous angular displacement. (Author)

ENICO-1054 PC **A03**/MF **A01**
Exxon Nuclear Idaho Co., Inc., Idaho Falls.
Continuous Plutonium Monitor for Nuclear Facility off-Gas Streams.
F. N. McDonald, S. J. Fernandez, and B. G. Motes. Oct 80, 40p
Contract AC07-79ID01675

This document is the final report of the project to develop a continuous, real-line monitor for ICPP plutonium emissions in the presence of naturally occurring radon daughters. The developed monitor collects the plutonium sample on a glass fiber filter followed by in-situ x-ray spectroscopy. The monitor was developed in two phases; laboratory testing and on-line demonstration. The major conclusions were the following: A Low-Energy Photon Spectrometer (LEPS) had sufficient sensitivity and resolution to detect the 40 hour occupational plutonium limit of 2 x 10 exp -6 pCi/cc in 24 hours. There were no detectable biases or inaccuracies due to unattended operation of the monitor. Therefore, the continuous plutonium monitor was deemed to be suitable for ICPP off-gas streams. (ERA citation 05:037745)

PAT-APPL-6-101 370 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Apparatus for Installing Condition-Sensing Means in Subterranean Earth Formations.
Patent Application,
L. Z. Shuck. Filed 7 Dec 79, 14p
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The present invention is directed to an apparatus for installing strain gages or other sensors-transducers in wellbores penetrating subterranean earth formations. The subject apparatus comprises an assembly which is lowered into the wellbore, secured in place, and then actuated to sequentially clean the wellbore or casing surface at a selected location with suitable solvents, etchants and neutralizers, grind the surface to a relatively smooth finish, apply an adhesive to the surface, and attach the strain gages or the like to the adhesive-bearing surface. After installing the condition-sensing gages to casing or earth formation the assembly is withdrawn from the wellbore leaving the sensing gages securely attached to the casing or the subterranean earth formation. (ERA citation 06:002803)

PAT-APPL-6-174 239 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
Electric Gel Slicer.
Patent Application,
Vincent Pryce Williams, and Shelly S. Sandifer. Filed 31 Jul 80, 21p PB81-131377
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This invention relates to material slicing machines, and more particularly to apparatus for cutting uniform slices of gel material.

PAT-APPL-6-195 188 PC **A02**/MF **A01**
Department of Health and Human Services, Washington, DC.
Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
Patent Application,
David E. Levy, Alfred Zwies, and Thomas E. Duffy. Filed 8 Oct 80, 11p PB81-129702
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

The present invention relates to masks for delivering inhalation gases to small laboratory animals and, more particularly, to such masks which are suitable for the delivery of volatile anesthetic gases without danger to the animal or to personnel in the area.

PATENT-4 228 950 Not available NTIS
Department of Health, Education, and Welfare, Washington, DC.
Horizontal Flow-Through Coil Planet Centrifuge.
Patent,
Yoichiro Ito. Filed 4 Dec 78, patented 21 Oct 80, 11p PB81-129355, PAT-APPL-966 329
Supersedes PB-294 773.
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

A horizontal flow-through coil planet centrifuge wherein flow-through separation columns are rotatably mounted on both sides of a rotor formed by a pair of spaced parallel rotary wings, with suitable intercoupling to avoid the need for rotary seals. Fluid circuit and adjustable valving arrangements are provided for (1) allowing two separations to be simultaneously performed, (2) for connecting the two columns in series to double the partition efficiency, or (3) using one column to separate samples in an ordinary manner while a desired portion of the eluate can be introduced into the second column to recycle.

PB81-121824 Not available NTIS
National Bureau of Standards, Washington, DC.
Units, Physical,
A. O. McCoubrey, and T. D. Goldman. 1980, 3p
Pub. in Paper in Academic American Encyclopedia 19 (TUV), p465-465 1980.

The article reviews the historical development of the Metric System of measurements, the basis for its structure and trends for the future.

PB81-124984 PC **A99**/MF **A01**
National Bureau of Standards, Washington, DC.
Ultrasonic Materials Characterization.
Final rept.,
Harold Berger, and Melvin Linzer. Nov 80, 649p NBS/SP-596
Proceedings of the First International Symposium on Ultrasonic Materials Characterization Held at the National Bureau of Standards, Gaithersburg, MD. on June 7-9, 1978. Library of Congress catalog card no. 80-600148.

Nondestructive testing has traditionally involved a search for flaws in materials or structures; it has long been appreciated that voids, cracks, inclusions, and similar flaws can lead to failure. Obviously, once a flaw has been detected, it is natural to consider methods that will give more information. What is the flaw size, type, location, or orientation. This information is necessary if a realistic assessment of the influence of the flaw on performance is to be made. In addition, it is now more widely recognized that parameters such as hardness, grain size, bonding, and residual stress can also have a strong influence on material performance. The use of ultrasonic nondestructive testing to characterize materials both in terms of properties and flaws is the subject of this volume. There-

fore, this volume is about nondestructive characterization of parameters that influence the performance of materials.

PB81-126112 Not available NTIS
National Bureau of Standards, Washington, DC.
Ultrasonic Diffraction Technique for Characterization of Fatigue Cracks,
S. Golan, L. Adler, and K. V. Cook. 1980, 9p
Pub. in Jnl. Nondestr. Eval. 1, n1 p11-19 1980.

This paper describes an ultrasonic diffraction technique for characterization of fatigue cracks. In a theoretical study the angular field of scattered energy was computed.

PB81-133654 PC **A03**/MF **A01**
National Bureau of Standards, Washington, DC.
Dimensions/NBS. Volume 64, Number 8, October 1980.
Monthly rept.
Oct 80, 32p MBS/DIM-64/8
See also Volume 64, Number 7 dated Sep 80, PB81-113201.

This monthly magazine features short summaries of major technical developments, highlights of work in progress, major speeches and statements by Bureau management, and a listing of NBS publications. The table of contents for the current issue is: A Look at Federal Office Automation, S. Radack; Safer Practice Makes Perfect, K. Kuo; Electrical Wiring: Staying on the Safe Side, G. Porter; I-C Test Structures for Random Faults, M. Baum; Temperature Reference Materials Available, SRM; Degradation of Solar Absorber Coatings, L. Masters; Test of Radiation Exposure Calculation for Reactor Pressure Vessels, E. McGarry.

PB81-850919 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nondestructive Testing of Joints. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Sep 80,
John H. Frey. Sep 80, 53p NERACEI NT1233
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the nondestructive testing or examination of joints (bonded, brazed, glued, soldered, welded, etc.) for the detection of flaws or structural defects. (Contains 51 citations.)

PB81-850927 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nondestructive Testing of Joints. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Sep 80,
John H. Frey. Sep 80, 59p NERACIAANT1233
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the nondestructive testing or examination of joints (bonded, brazed, glued, soldered, welded, etc.) for the detection of flaws or structural defects. (Contains 102 citations.)

PB81-851081 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Kalman Filters. January, 1970-October, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 212p
NERACUSGNT1917
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover information on design and applications of Kalman filters for flow control, air pollution control, navigation systems, radar tracking, linear and non-linear electronic systems, antenna arrays, communications, and noise measurements. (Contains 200 citations.)

PB81-851099 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Kalman Filters. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Oct 80,
Walter Van Put. Oct 80, 132p NERACIAANT1917
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on design and applications of Kalman filters for flow control, air pollution control, navigation systems, radar tracking, linear and non-linear electronic systems, antenna arrays, communications, and noise measurements. (Contains 200 citations.)

PB81-851107 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Kalman Filters. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 178p NERACEI NT1917
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on design and applications of Kalman filters for flow control, air pollution control, navigation systems, radar tracking, linear and non-linear electronic systems, antenna arrays, communications, and noise measurements. (Contains 200 citations.)

PB81-851115 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Centrifuges. January, 1970-October, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 219p
NERACUSGNT1584
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover Federally funded research reports on design and applications of centrifuges for liquid-liquid, liquid-solid, and liquid-gas separation. Discussion of gas, scroll, continuous and pusher centrifuges are also included. (Contains 200 citations.)

PB81-851123 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Centrifuges. January, 1976-October, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Oct 80,
Walter Van Put. Oct 80, 203p
NERACEDBNT1584
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on studies, design and applications of centrifuges for liquid-liquid, liquid-solid, and liquid-gas separation. Discussion of gas, scroll, continuous and pusher centrifuges are also included. (Contains 200 citations.)

PB81-851131 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Centrifuges. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 199p NERACEI NT1584
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on design and applications of centrifuges for liquid-liquid, liquid-solid, and liquid-gas separation. Discussion of gas, scroll, continuous and pusher centrifuges are also included. (Contains 200 citations.)

PB81-851149 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Centrifuges. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Oct 80,
Walter Van Put. Oct 80, 108p NERACIAANT1584
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover worldwide information on design and applications of centrifuges for liquid-liquid, liquid-solid, and liquid-gas separation. Discussion of gas, scroll, continuous and pusher centrifuges are also included. (Contains 200 citations.)

PB81-851248 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Densitometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 213p
NERACUSGNT1628
Sponsored by National Technical Information Service, Springfield, VA.

The cited reports from Federally funded research, cover studies and applications of densitometers. (Contains 200 citations.)

PB81-851255 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Densitometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Oct 80,
Walter Van Put. Oct 80, 165p
NERACEDBNT1628
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covering studies and applications of densitometers are discussed. (Contains 159 citations.)

PB81-851263 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Densitometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 158p NERACEI NT1628
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covering studies and applications of densitometers are discussed. (Contains 169 citations.)

PB81-851271 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Densitometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Oct 80,
Walter Van Put. Oct 80, 153p NERACIAANT1628
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covering studies and applications of densitometers are discussed. (Contains 200 citations.)

PB81-851495 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Accelerometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 221p
NERACUSGNT1425
Sponsored by National Technical Information Service, Springfield, VA.

The cited reports, from Federally funded research, cover design, construction, and applications of accelerometers for measurement of motion, vibration medicine, roughness, waves, shear stresses, shock, and gravity. (Contains 200 citations.)

PB81-851503 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Accelerometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Oct 80,
Walter Van Put. Oct 80, 91p NERACEDBNT1425
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covers research, design, construction, and applications of accelerometers

for measurement of motion, vibration medicine, roughness, waves, shear stresses, shock, and gravity. (Contains 80 citations.)

PB81-851511 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Accelerometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 187p NERACEI NT1425
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covers research, design, construction, and applications of accelerometers for measurement of motion, vibration medicine, roughness, waves, shear stresses, shock, and gravity. (Contains 200 citations.)

PB81-851529 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Accelerometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Oct 80,
Walter Van Put. Oct 80, 105p NERACIAANT1425
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covers research, design, construction, and applications of accelerometers for measurement of motion, vibration medicine, roughness, waves, shear stresses, shock, and gravity. (Contains 200 citations.)

PB81-851719 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Profilometers. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Aug 80,
William V. Sassi. Oct 80, 75p NERACEI NT1930
Sponsored by National Technical Information Service, Springfield, VA.

The citations in this bibliography cover fast versatile optical profilometers, airborne profilometer measurements, photometric measurement of terrain roughness, and three dimensional characterization of engineering surfaces. (Contains 71 citations.)

PB81-851784 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nondestructive Testing of Fractures. January, 1970-June, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Jun 80,
John H. Frey. Aug 80, 92p NERACUSGNT1256
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the nondestructive techniques for testing or examining fractures in miscellaneous materials and in a wide variety of fabricated objects and equipment. The bibliography also covers theoretical consideration of fracturing processes. (Contains 78 citations.)

PB81-851792 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nondestructive Testing of Fractures. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Jun 80,
John H. Frey. Aug 80, 161p NERACIAANT1256
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the nondestructive techniques for testing or examining fractures in miscellaneous materials and in a wide variety of fabricated objects and equipment. The bibliography also covers theoretical consideration of fracturing processes. (Contains 200 citations.)

PB81-851800 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Jun 80,
John H. Frey. Aug 80, 151p NERACUSGNT1232
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the theory and techniques for nondestructive testing or examination of welded joints in small and large objects and structures for the detection of flaws or defects which affect their properties and behavior as well as those of the object or structure being welded. Special attention is given to the detection of fatigue in welds. (Contains 145 citations.)

PB81-851818 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Jun 80,
John H. Frey. Aug 80, 179p NERACEDBNT1232
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the theory and techniques for nondestructive testing or examination of welded joints in small and large objects and structures for the detection of flaws or defects which affect their properties and behavior as well as those of the object or structure being welded. Special attention is given to the detection of fatigue in welds. (Contains 177 citations.)

PB81-851826 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Jun 80,
John H. Frey. Aug 80, 159p NERACEI NT1232
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the theory and techniques for nondestructive testing or examination of welded joints in small and large objects and structures for the detection of flaws or defects which affect their properties and behavior, as well as those of the object or structure being welded. Special attention is given to the detection of fatigue in welds. (Contains 177 citations.)

PB81-851834 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Jun 80,
John H. Frey. Aug 80, 150p NERACIAANT1232
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning the theory and techniques for nondestructive testing or examination of welded joints in small and large objects and structures for the detection of flaws or defects which affect their properties and behavior as well as those of the object or structure being welded. Special attention is given to the detection of fatigue in welds. (Contains 200 citations.)

PB81-855140 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Thermocouple Applications. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jun 74-May 80,
William V. Sassi. Jun 80, 43p NERACIAANT0295
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss the application of thermocouples to such areas as jet engine design, aerospace research, heat pumps, gas turbines, and other related topics. (Contains 042 citations.)

PB81-855157 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Thermocouple Applications. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
William V. Sassi. Jun 80, 43p NERACEI NT0295
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography discuss the application of thermocouples to such areas as electronics, solar collector technology, thermocouple circuits in underground coal gasification, gas turbine design, and other related topics. (Contains 036 citations.)

RFP-3010 PC **A03**/MF **A01**
Rockwell International, Palo Alto, CA. Energy Systems Group.
Mobile Ambient Air Monitor.
C. M. Johnson, and L. H. Faber. 24 Sep 80, 41p
Contract AC04-76DP03533

The Mobile Ambient Air Monitor (MAAM) is designed to record ambient levels of carbon monoxide, methane, total hydrocarbons, ozone, sulfur dioxide, nitric oxide, nitrogen dioxide, and total oxides of nitrogen. Wind speed and direction, barometric pressure, temperature, and relative humidity are the measured meteorological conditions. An acoustic sounder installed to measure inversion heights above the measuring station. A data acquisition system records all analyzed pollutants plus the meteorological conditions. (ERA citation 06:001319)

UNI-TR-4 PC **A04**/MF **A01**
UNC Nuclear Industries, Inc., Richland, WA.
Ultrasonic Flowmeters: A Progress Report.
W. D. Wittekind. 12 Nov 80, 61p
Contract AC06-76RL01857

This progress report describes the components and system configuration of the prototype ultrasonic flowmeter and initial flow testing. It is the second in a series of progress reports on the development and testing of ultrasonic flowmetering concepts. The greatest advantage of an ultrasonic flowmeter is that the instrument can be installed on the outside of a pipe with no modifications required. The flow is measured through the pipe walls. However, complex electronic systems are needed for the measurements. The ultrasonic flowmeter features: high resolution limited only by the electronics; fast response since there are no moving parts; measurement over a wide range of flow conditions; portability; and can be used for a range of different pipe sizes. No current alternative method of measuring flow combines all these advantages. (ERA citation 05:038633)

14C. Recording Devices

AD-A091 981/1 PC **A03**/MF **A01**
Aeronautical Research Labs., Melbourne (Australia).
An Improved Flight Data Transcriber.
Technical memo.,
A. J. Farrell Feb 80, 29p Rept no. ARL/AERO-TM-318

A unit is described which converts serial data recorded on the MKI or MKII Aero Division Airborne Data Acquisition Package into a form suitable for recording on 7-track computer compatible tape. It is an improved version of a previous unit designed to work with the MKI Data Acquisition Package. (Author)

AD-A092 029/8 PC **A04**/MF **A01**
MITRE Corp., McLean, VA. METREK Div.

Concepts for Utilization of Video Discs in Military Applications.
Technical rept.,
M. J. McKelvy. Apr 77, 64p Rept no. MTR-7535
Contract F19628-77-C-0001

Video disc systems, an emerging technology, offers great potential in several military application areas. These systems can be used for training and teaching, for document mass storage and retrieval, or for digital data storage and retrieval. This paper reviews the current state of video disc technology and compares video disc capabilities to these and other storage media, and describes concepts for utilizing video disc systems in military applications. (Author)

AD-B010 481/0 PC **A05**/MF **A01**
Pacific Missile Test Center, Point Mugu, CA.
Analysis of the Power Spectral Density of Tape Recorder Flutter.
Technical publication,
E. L. Law. 26 Mar 76, 86p Rept no. PMTC-TP-76-7
Distribution limitation now removed.

This report presents the results of a study on the flutter, servo, and interchannel time displacement error characteristics of analog mangetic tape recorders. The main conclusions are that the flutter spectrum of a crossplay between two tape recorders can be predicted if the flutter characteristics of each tape recorder are known and that many tape recorders have underdamped servo systems that cause some flutter components to be amplified in the tape servo mode. (Author)

AD-883 122/4 PC **A07**/MF **A01**
Singer-General Precision Inc Sunnyvale Calif Link Div
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
Final technical rept. 16 Jul 70-16 Jan 71,
Woodrow L. Hayes, Heino Ristlaid, and Nicholas S. Szabo. Mar 71, 136p UC-7245, RADC-TR-71-51
Contract F30602-70-C-0202
Distribution limitation now removed.

A study was conducted to determine the feasibility of a system that will record, in parallel, both human readable and machine readable information on a microfiche. The first phase, described in AD-715 983, investigated methods for recording the machine readable information. It concluded that holographic methods are superior to direct recording for this application. This final report represents the over-all design for the HRMR system. Two alternate approaches are described, the choice between them being dependent on locating a suitable film for the recording of the holographic information. In the first approach all information is recorded with a laser, while in the second system the human readable information is recorded with a CRT and the machine readable data is recorded with Light Emitting Diodes. Recording times for the two approaches are 84 seconds and 30 seconds, respectively.

14E. Reprography

AD-833 815/4 PC **A03**/MF **A01**
Rome Air Development Center, Griffiss AFB, NY.
Engineering Evaluation of the Vanguard M-731 Viewer.
Final technical rept. 28 Feb-3 Apr 68,
Warren M. Emlen. May 68, 45p Rept no. RADC-TR-68-197
Distribution limitation now removed.

The Vanguard Model M-731 70mm rear projection viewer was tested to determine its specific capabilities. The tests accomplished included AWAR resolution, screen brightness, distortion, magnification, field of view, film transport speeds, projection gate temperature, and ease of operation. (Author)

AD-884 320/3 PC **A06**/MF **A01**
Rome Air Development Center, Griffiss AFB, NY.
Engineering Evaluation of the AR-109(XW-1) Viewer-Printer, Projection, Photographic.
Technical rept.,
Warren M. Emlen. Apr 71, 104p Rept no. RADC-TR-71-83
Distribution limitation now removed.

The report contains the results of the RADC engineering tests accomplished on the viewer-printer. These tests show the AR-109 to be a superior viewer to any presently in operational use. The advanced concepts embodied in the AR-109 should now be given an operational (field) test to determine their suitability for incorporation in future imagery display equipment. (Author)

AD-884 645/3 PC **A03**/MF **A01**
Rome Air Development Center, Griffiss AFB, NY.
Coherent Rear Projection Viewer Evaluation.
Technical rept. Jan - Nov 70,
Richard D. Arlen, Jr. May 71, 47p Rept no. RADC-TR-71-90
Distribution limitation now removed.

The objective of this study was to evaluate the extent to which coherent array illumination, with respect to incoherent illumination, could improve the modulation of imaged high resolution, 15-bar, test targets. Targets tested ranged from a density difference of 0.3 to 1.0 in steps of 0.1. Points of focus for each target were 63.13, 100, 125.9, 158.5, and 199.6 LP/MM. The coherent array illumination yielded significant increases in modulation at 100 LP/MM and above. (Author)

AD-919 575/1 PC **A06**/MF **A01**
Bendix Research Labs., Southfield, MI.
Off-Line Orthographic Printer.
Final technical rept. Sep 69-Jun 73,
J. E. Bybee, and J. P. Szafranski. Apr 74, 125p BRL-6633, RADC-TR-74-4
Contract F30602-71-C-0082
Distribution limitation now removed.

Development has been completed on a new off-line orthographic printer which uses an OMI optical printer and a Bendix Bx-272 control computer. The system produces either orthophotos or rectified photos from either frame or panoramic input photography. Compared to previous off-line printers, the new system offers higher resolution, accuracy, and speed. (Author)

PATENT-4 206 466 Not available NTIS
Department of the Navy, Washington, DC.
Non-Fouling Print Stylus.
Patent,
William L. Grummer. Filed 12 Mar 79, patented 3 Jun 80, 4p AD-D007 865/9, PAT-APPL-6-019 792
Supersedes PAT-APPL-6-019 792, AD-D006 031.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

The present invention relates to print styli for an electrosensitive printer, and more particularly to print styli which are not subject to fouling from print residue. Accordingly, the present invention provides a non-fouling print finger having an integral shield. The print finger has a movable arm with a print stylus at the end, the movable arm situated between the print finger body and an integral shield. The shield funnels the print residue past the print stylus into a reduced area below the print stylus from which the residue is free to fall. The shield also retains the print stylus by bracing the movable arm during cleaning, thereby preventing damage.

[redacted]

15. MILITARY SCIENCES

15A. Antisubmarine Warfare

AD-A092 405/0 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
Master's thesis,
Clifford Monroe Cagle. Sep 80, 134p

This thesis presents an application of Multidimensional Scaling (MDS) used in the prioritization of ASW decision functions in the S-3A. The ASW decision space was divided into 14 discrete decision functions for the purposes of this analysis. The problem of developing a prioritization methodology was approached from two independent directions. First, an unconstrained sorting task was preformed to provide input to Multidimensional Scaling algorithm. The result of this analysis provided a three dimensional representation of the decision space with dimensional interpretation. Second, a series of ranking tasks were preformed to provide input to an Unfolding Analysis algorithm. The Generalized Distance Model was selected as the model most representative of the ranking data. The decision function coordinates for the MDS algorithm and the decision function coefficients for the Unfolding Analysis algorithm were combined in a regression-like equation to provide a prioritization methodology for the 14 decision functions of the S-3A ASW decision space. (Author)

15B. Chemical, Biological, and Radiological Warfare

AD-B031 659/6 PC **A03**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Chemical Systems Lab.
Survey of Decontamination Methods related to Field Decontamination of Vehicles and Materiel (Abridged).
Technical rept. Dec 75-Sep 78,
Frank Block, and George T. Davis. Oct 78, 28p ARCSL-TR-79002, SBIE-AD-E410088
Distribution limitation now removed.

Basic and applied works on chemical agent decontamination are reviewed, particularly regarding field decontamination problems. Application of some foreign systems are discussed. Suggestions of promising avenues for improvement are provided in the conclusions. (Author)

AD-885 837/5 PC **A04**/MF **A01**
Brunswick Corp Lincoln Nebr Technical Products Div
Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
Final comprehensive rept. Jun 70-Jun 71,
Keith J. Conklin. Jun 71, 56p Rept no. PS8104-F
Contract DAAA15-70-C-0193
Distribution limitation now removed.

This report covers the production engineering efforts on the ECU/PSU, shelter, CPU, systems components; quality assurance and documentation efforts; and a summary of contract coordination during this reporting period. (Author)

PATENT-4 225 316 Not available NTIS
Department of the Navy, Washington, DC.
Chemical Agent Detection Method and Apparatus.
Patent,

Seymour Z. Lewin. Filed 28 Nov 61, patented 30 Sep 80, 5p AD-D007 869/1, PAT-APPL-157 299 Supersedes PAT-APPL-157 299-61.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

It is desirable for military and civilian defense purposes to have a reliable process and apparatus for detecting nerve gases which may be used in warfare. The chemistry of this kind of gas is well developed and the compounds which characterize these gases typically comprise halogen compounds (e.g. organic fluorophosphonates). A further characteristic is that they are not easily detected by ordinary means. It is vitally important for military and civilian defense purposes to detect them at an early stage and also to have a measure of their content in an area which is being subjected to de-contamination in order to detect accurately the point at which the area may safely be reoccupied. It is, accordingly an object of this invention to provide a method of detecting low concentrations of gases containing predetermined chemical agents, specificallyl, halogen-containing compounds in mixtures.

15C. Defense

AD-A092 015/7 PC **A03**/MF **A01**
Control Dynamics Co., Huntsville, AL.
Guidance and Control of Anti-Tactical Ballistic Missiles.
Final technical rept. 17 Sep-6 Nov 80,
H. Eugene Worley. 6 Nov 80, 26p
Contract DAAH01-80-M-0399

This technical report covers the efforts undertaken to review guidance and control development status of a interceptor vehicles of tactical ballistic missiles. Technology needs are identified for promising concepts being pursued by other agencies. Of particular interest in this review is the Navy High Angle threat (HAT) defense concepts. (Author)

AD-A092 056/1 PC **A08**/MF **A01**
SYSTAN, Inc., Los Altos, CA.
Food System Support of the Relocation Strategy in California. Volume I. Analysis.
Final rept.,
Arthur W. Simpson, and John W. Billheimer. Sep 80, 151p Rept no. SYSTAN-D162-VOL-1
Contract DCPA01-78-C-0220
See also Volume 2, AD-A092 164.

This study extends previous research into food distribution under crisis relocation conditions by investigation detailed distribution problems in a state, California, where relocation distances are unusually long, and heavy population concentrations in threatened areas are expected to stretch the capabilities of host areas to the limit. (Author)

AD-A092 164/3 PC **A05**/MF **A01**
SYSTAN, Inc., Los Altos, CA.
Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
Final rept.,
Arthur W. Simpson, and John W. Billheimer. Sep 80, 78p Rept no. SYSTAN-D162-VOL-2
Contract DCPA01-78-C-0220
See also Volume 1, AD-A092 056.

This study extends previous research into food distribution under crisis relocation conditions by investigating detailed distribution problems in a state, California, where relocation distances are unusually long, and heavy population concentrations in threatened areas are expected to stretch the capabilities of host areas to the limit. The report traces the existing patterns of food distribution in California; develops and analyzes alternative strategies for redirecting the existing food distribution system to support the relocated population; investigates the transportation requirements imposed by distribution changes; drafts prototype plans for redirecting the state food distribution network in an emergency; and develops appropriate guidelines for the use of Nuclear Civil Protection planners and local officials.

AD-A092 168/4 PC **A08**/MF **A01**
National Security Affairs Inst., Washington, DC.
Defense Planning and Arms Control. Proceedings of a Special NSAI Conference, 12-14 June 1980, National Defense University, Washington, DC.
Sep 80, 168p

Partial contents: Integrating Defense Planning and Arms Control--The Role of Arms Control in Defense Planning: Integration, Subordination, of Obliteration, National Security Policy Integration; Integrating Defense Planning; Problems and Prospects for Arms Control in the 1990s--Is There a Future for Negotiated Arms Limitations. Arms Control in the 1980s: Retrospect, Contrast, Prospect, SALT on the Back Burner: Some Considerations for US Defense Policy.

AD-A092 200/5 MF **A01**
Honeywell, Inc., St. Petersburg, FL.
MILES Pressure/Seismic Response Engineering Development of MILES Test Fixture.
Final technical rept. 12 Apr 79-31 Mar 80,
Kerry J. Sutherland, and Thom R. Cavanagh. Aug 80, 187p RADC-TR-80-271
Contract F30602-76-C-0385
Availability: Microfiche copies only.

This report describes the development, configuration, operation, and evaluation of Transducer Test Set TS-3753/U. The test set is a fixture designed to measure the physical parameters plus seismic and magnetic response characteristics of Motional Pickup Transducer TR-29916 commonly called the MILES transducer. The measurements can be performed in a factory environment to permit the data to be used to monitor the manufactured quality of the MILES transducer. (Author)

AD-A092 300/3 PC **A06**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Reflexive Launch Strategies.
Master's thesis,
Kurt Allan Strauss. Jun 80, 119p

Given the impending vulnerability of U.S. ICBMs, this thesis assesses the viability of countervailing reflexive launch strategies. Arguments are based on logical analysis of capabilities within the context of political realities. This thesis establishes the relative utility of reflexive launch strategies as part of the total strategic deterrent posture. Presentation of evidence (logical; historical; quantitative) supports a case for specific reflexive launch options. The central thesis is that regardless of technical capabilities (e.g., warning systems or C3(Command, Control and Communications) reflexive strategies are not substantial enough to act as a doctrinal shield for inherently vulnerable land-based forces. Alternatively, it will be shown that within the context of existing/projected U.S. weapon systems (e.g., MX, ALCM), as well as Soviet forces and perceptions, the capability for rapid retaliation prior to impact or immediately following an attack will remain an essential element of a credible deterrent. It is argued that survivable weapons simply shift vulnerability to the centers of political and economic power and do not obviate the requirement for deterring reflexive launch options.

AD-A092 422/5 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
The Modernization of the Chinese People's Liberation Army: Goals and Problems.
Master's thesis,
Philip Shing-Hwa Yang. Jun 80, 136p

This thesis focuses on the modernization of the Chinese armed forces in the much publicized 'Four Modernizations' currently underway in China. The composition, capabilities and vulnerabilities of the People's Liberation Army - the collective name for the armed forces of the People's Republic of China - are identified, and the political, technological and economic phenomena which will influence the military modernization effort are analyzed. (Author)

AD-B023 039/1 PC **A03**/MF **A01**
Army Infantry School, Fort Benning, GA.
Independent Evaluation Report for Platoon Early Warning System (PEWS-IER) AN/TRS-2( ).
Final rept. 30 Aug-15 Oct 76,
David P. Spencer. May 77, 32p
Distribution limitation now removed.

The Independent Evaluation Report (IER) addresses the Operational Test II (OT II) of the Platoon Early Warning System (PEWS) AN/TRS-2( ) conducted by the US Army Airborne, Communications Electronics Board (USAACEBD) at Fort Bragg, North Carolina during ther period 30 August 1976 to 15 October 1976. Conclusions developed as a result of the independent evaluation process will be utilized as a basis for development of the TRADOC/USAIS position for the PEWS Development Acceptance In-Process Review (DEVA-IPR) scheduled for 1 June 1977. This evaluation addresses the systems' operational capability, the validity of the logistical concept and the adequacy of the system. Primarily, data from OT II is evaluated in this report; however, data from all sources is considered and used where practical. (Author)

AD-B033 848/3 PC **A03**/MF **A01**
Institute for Defense Analyses, Arlington, VA. Program Analysis Div.
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
Final rept.,
Norman J. Asher, and Janice B. Lilly. Jul 78, 49p P-1365, SBIE-AD-E500/03J
Contract DAHC15-73-C-0200
Distribution limitation now removed.

The degree of achievement of standardization or interoperability is directly linked to the types of programs used in the procurement of weapon systems by the NATO allies. In this paper we review the types of programs that can be used among nations in the development and procurement of weapon systems, discuss a number of considerations involved in program choice, and present a case study of the types of aircraft development and procurement programs used by our NATO allies since the 1949 establishment of NATO. (Author)

15D. Intelligence

AD-B024 969/8 PC **A10**/MF **A01**
Bohan (Walter A.) Co., Park Ridge, IL.
Navy Tactical Applications Guide. Volume I. Techniques and Applications of Image Analysis,
Robert W. Fett, and Walter F. Mitchell. Jan 77, 207p NEPRF-AR-77-03
Contract N00228-76-C-3025
Original contains color plates: All DDC reproductions will be in black and white.
Distribution limitation now removed.

Background on the Defense Meteorological Satellite Program (DMSP) is provided, updated for the Navy system and the Block 5-D spacecraft. Geometrical aspects of sunglint are described with nomograms for determining the distance from the subsatellite track to the Primary Specular Point (PSP). Various aspects of sunglint patterns with implications vis a vis determining sea state and low-level wind direction are illustrated and described. The meaning of anomalous gray shade patterns appearing in DMSP Very High Resolution (VHR) visual data is thoroughly explored with examples of each specific cause and suggestions for tactical use. Island and land barrier effects on sea state and atmospheric moisture are illustrated in a variety of different sunglint relationships.

15E. Logistics

AD-A091 881/3 MF **A01**
Uniroyal, Inc., Naugatuck, CT. Consumer Products Div.

Production of Insulated Footwear Using Liquid Injection Molding Equipment. 1. Method.
Final rept. 15 Sep 77-15 Jul 79,
James H. Flood. 15 Jul 79, 135p NATICK-TR-80/019, NATICK/CEMEL-216
Contract DAAK60-77-C-0071
See also AD-A061 049.
Availability: Microfiche copies only.

The objective of this project was to set up and demonstrate a manufacturing line capable of continuous production of 60 pairs per week of lightweight insulated boots from liquid injection molded expanded polyurethane. This report describes in detail all production equipment, production methods, and process conditions used to fabricate the lightweigth insulated boot. Cycle times for the various major operations are included based on the optimum operation of the equipment. Mold requirements, equipment layouts and operations flow chart are listed. (Author)

AD-A091 882/1 PC **A10**/MF **A01**
Institute for Defense Analyses, Arlington, VA. Program Analysis Div.
Report of Combat Consumption Modeling Improvement Panel.
Final rept.,
Jerome Bracken, John R. Bode, Seth Bonder, Hugh M. Cole, and David B. Kassing. Jul 80, 206p IDA-P-1455, IDA/HQ-79-21815, AD-E500 219
Contract MDA903-79-C-0320
Prepared in cooperation with BDM Corp., Vector Research Inc., Center for Naval Analyses and Rand Corp.

This report recommends improvements to the process of planning for sustainability of ground, air and naval forces. The methodologies used by the Services for analyzing warfare and deriving requirements for munitions and war reserve equipment are reviewed, and improvements are suggested in many areas. The report includes an appendix which treats selected modeling issues in detail.

AD-A091 889/6 PC **A04**/MF **A01**
Army Combined Arms Studies and Analysis Activity, Fort Leavenworth, KS.
Army 86 Cost Sensitivity Analysis Verification.
Final rept.,
Harry P. Levitt. Sep 80, 72p Rept no. CASAA-TR-11-80
See also Rept. no. CASAA-TR-1-80.

This report describes the verification of the sensitivity analysis described in Technical Report 1-80 (TR 1-80), subject, Army 86 Cost Sensitivity Analysis, dated May 1980. The cost methodology described in Tr 1-80 was used to cost the Heavy Division 86 C and S-series divisions. A comparison of the costs of these divisions using the cost driver method of costing with the cost of these divisions using the AURS (100 percent) method of costing was performed. This comparison shows that the cost driver methodology is an acceptable more responsive method of force costing than the AURS (100 percent) method of costing. (Author)

AD-A091 935/7 PC **A03**/MF **A01**
RAND Corp., Santa Monica, CA.
Models and Techniques for Recoverable Item Stockage when Demand and the Repair Process are Nonstationary. Part I. Performance Measurement.
Interim rept.,
R. J. Hillestad, and M. J. Carrillo. May 80, 44p
Rept no. RAND/N-1482-AF-PT-1
Contract F49620-77-C-0023

This document provides an integrated approach to inventory performance measurement for a given stockage allocation for systems with nonstationary demands and service rates. It suggests approaches to certain aspects of recoverable item repair and supply that currently cause significant deviation between practice and theory, even in the case of stationary demands and service rates. It also provides models for different degrees of cannibalization of primary recoverable items, and describes a group of scenario-dependent performance measures for predicting the effects of inventory and service policy on organizational performance. The reader will require a knowledge of probability theory. (Author)

AD-A092 167/6 MF **A01**
Naval Material Command, Washington, DC.
Integrated Logistic Support. Implementation Guide for DoD Systems and Equipments.
Mar 72, 209p
Availability: Superintendent of Documents, GPO, Washington, DC 20402, Stock Number 0518-LP-300-0000 HC $2.00 Microfiche furnished to DTIC (and NTIS) users.

This Integrated Logistic Support Implementation Guide for DOD Systems and Equipments is designed to assist program managers in government and industry in the implementation of that policy contained in DOD Directive 4100.35. in discussion of the application of the ILS concept to various types of acquisition, description of ILS techniques and the relationship of ILS to other disciplines, this guide facilitates improved communications between government and industry program managers, design, procurement, and financial managers, and between various agencies within the government. The guide is organized to make it useful for program managers involved in the detailed planning and management of logistic support, and at the same time to be a valuable reference source for the non-specialist who needs assistance on specific problems with respect to logistics support and its interfaces.

AD-A092 310/2 PC **A99**/MF **A01**
Construction Engineering Research Lab. (Army), Champaign, IL.
Type II Forward Storage Site Facilities. POMCUS System. Volume 1.
Final rept.,
Robert L. Porter. Sep 80, 612p Rept no. CERL-TR-P-112-VOL-1

This two-volume report provides comprehensive generic information for the design and construction of future Prepositioned Materiel Configured to Unit Sets (POMCUS) installations, with specific attention to: (1) the particular facility requirements of POMCUS installation user/occupants in accomplishing the storage, maintenance, and issue functions; (2) The military threats and vulnerabilities; (3) The NATO construction finding justification provisions; and (4) The lessons learned from the daily operations and Return of Forces to Germany (REFORGER) exercises occurring on the existing Combat Equipment Group-Europe (CEGE) sites. Information in this report was compiled from three sources relevant to the decision-making process: (1) supplies and equipment data, (2) Army and Congressional literature, and (3) the experience and knowledge of CEGE personnel. Volume 1 presents POMCUS-related supply and equipment data from the Army Automated Data System (TAADS), and discusses ways to improve POMCUS. Volume 2 outlines design information for POMCUS facilities and sites. (Author)

AD-A092 319/3 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Pre-Expended Bin Material Management at Naval Air Rework Facilities.
Master's thesis,
James E. Vogelsang. Jun 80, 74p

Naval Air Rework Facilities (NARFs) are the major industrial component of the Naval Air Systems Command. In the accomplishment of their industrial mission, the NARFs require an extensive range of material to support their various production programs. Low cost, high usage material is managed by a concept known as Pre-Expended Bin (PEB). The PEB material typically receives little management attention and has been the source of criticism from periodic material management audits. Auditors have estimated the value of PEB inventories to be about one million dollars per NARF. This thesis proposes a system to improve PEB management by formalizing the decision rules and providing a method of gathering required demand data. The thesis is concluded with a discussion of some of the implementation considerations of the proposed system. (Author)

AD-A092 421/7 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Analysis of the Problems Involved in the Utilization of Merchant Shipping to Support the U.S. Government during Declared Mobilization Situations.
Master's thesis,
Philip Stephen Hannaford. Sep 80, 63p

This study examines the utilization of the current United States (U.S.) Merchant Marine to respond to the demands placed upon it by a full military mobilization. Included is a brief history of the Merchant Marine, its relationship to the National Defense Reserve Fleet and the Military Sealift Command controlled fleet. Also discussed in the analysis are the procedures for requisitioning the Merchant Marine, the roles it might fulfill in wartime, and the types of ships available in the present inventory. Conclusions and recommendations are described. Of particular note is the need for foreign purchase of vessels to be used in U.S. oceangoing commerce, the necessity of establishing a national maritime policy, and the continuation of governmental agency interaction to study the Merchant Marine. (Author)

AD-B029 883/6 PC **A04**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study. Volume I. Executive Summary.
Final rept. Apr 75-Mar 78.
1 Jul 78, 63p
See also Volume 2, AD-B029 884L.
Distribution limitation now removed.

This report covers the JLC Control Panel and Working Group efforts during the period April 1975 to March 1978. This effort involved the collection of all DOD supply transactions and cost data; information on the physical facilities that receive, store, process, issue, and ship wholesale materiel; visits to each of the 34 wholesale depots nominated for study; personal interviews with consultants and recognized experts in the field of physical distribution; and the use of two state-of-the-art mathematical models.

AD-B029 884/4 PC **A15**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study. Volume II. Technical report.
Final rept.
1 Jul 78, 337p
See also Volume 3 Book 1, AD-B029 885L.
Distribution limitation now removed.

The Technical Report, Volume II, is the technical description of the study of Materiel Distribution. It is intended primarily for staff elements required to review the report and those persons who will have implementation or follow-on responsibilities. It consists of the following eight chapters: Chapters (1) and (2) -- 'Introduction' and 'System Requirements'; Chapter (3) -- 'The Baseline System'; Chapter (4) -- 'Methodology'; Chapter (5) -- 'Analysis'; Chapter (6) -- 'Options'; and Chapters (7) and (8) -- 'Findings, Conclusions, and Recommendations' and 'Implementation Considerations'.

AD-B029 885/1 PC **A12**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study. Volume III. Book 1, Optimization Model Run Index.
Final rept.
1 Jul 78, 270p
See also Volume 3, Book 2, AD-B029 886L.
Distribution limitation now removed.

This report contains a chronological index and description of the optimization model runs used by the study group to assist in the analyses. The index shows the sequential development of the modeling strategy, provides a benchmark for future analysis, and (in conjunction with the output of the model runs) traces the development of the analyses which led to the conclusions drawn by the study group. Runs are described in terms of the input parameters and data which, when specified, define a unique problem to be solved by the optimization model. A glossary of terms used is provided at the end of this appendix to assist in interpretation of the index. (Author)

AD-B029 886/9 PC **A13**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study. Volume III, Book 2. Appendices A, B and C.
Final rept.

1 Jul 78, 298p
See also Volume 3, Book 3, Appendix D-1, AD-B029 887L.
Distribution limitation now removed.

This report on the Department of Defense Materiel Distribution System Contains: Appendix A--LSPC Task Group 5-70; Charter for Joint Logistics Commanders' Panel to Study the DOD Materiel Distribution System (DODMDS); and DODMDS Study Plan; Appendix B--Unique Service/Agency Needs; and Appendix C--Introduction; DODMDS Customer Data; and DODMDS Materiel Source Data.

AD-B029 887/7 PC **A21**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study. Volume III. Book 3. Appendix D-1. Data Base Development.
Final rept.
1 Jul 78, 499p
See also Volume 3, Book 4, Appendix D-2, AD-B029 888L.
Distribution limitation now removed.

This report on the Department of Defense Materiel Distribution System(DODMDS) is divided into the following sections: Section 1 - Introduction; Section 2 - Wholesale shipment data; Section 3 - Retail issue data; Section 4 - Wholesale receipt data; Section 5 - Retail receipts data; Section 6 - Vendor address and contract data; Section 7 - Wholesale/retail asset data; Section 8 - Catalog data; Section 9 - Transportation data; and Section 10 - Data base purification.

AD-B029 888/5 PC **A10**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study. Volume III, Book 4. Appendix D-2, Data Aggregation.
Final rept.
1 Jul 78, 215p
See also Volume 3, Book 5, Appendix D-3, AD-B029 889L.
Distribution limitation now removed.

This report on the Department of Defense Materiel Distribution System is divided into the following sections: Section 1 - Introduction; Section 2 - Customer aggregation; Section 3 - Commodity aggregation; Section 4 - Procurement source aggregation; and Section 5 - Bundling.

AD-B029 889/3 PC **A17**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study. Volume 3, Book 5. Appendix D-3. Depot Cost and Capacity.
Final rept.
1 Jul 78, 391p
See also Volume 3, Book 6, Appendix D-4, AD-B029 890L.
Distribution limitation now removed.

This report on the Department of Defense Materiel Distribution System(DODMDS) is divided into the following sections: Section 1 - Introduction; Section 2 - Baseline; Section 3 - Nominal depot costing; Section 4 - Depot capacity; and Section 5 - Development of nominal depot operating costs.

AD-B029 890/1 PC **A19**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 6. Appendix D-4, Transportation.
1 Jul 78, 433p
See also Volume 3, Book 7, AD-B029 891L.
Distribution limitation now removed.

The following sections of this report, excluding the Introduction, section 1, provide the methodology employed to respond to the stated requirements of the report. Section 2 addresses the methodology used to develop and validate transportation rates, and to acquire data for analysis of transportation and facility capabilities. Section 3 describes the methodology used for the development of transportation times. Section 4 addresses a by-product of the transportation data accumulation and analysis. It provides some historical materiel flows, and is provided to identify some potential areas for transportation improvement. The transportation forecast is in the final two sections. 'The Commercial Transportation Rate Forecast' is presented in Section 5, and the forecast of 'Future Developments in Ocean Transportation' is provided in Section 6.

AD-B029 891/9 PC **A04**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 7. Appendix D-5, Models.
1 Jul 78, 59p
See also Volume 3, Book 8, AD-B029 892L.
Distribution limitation now removed.

This report appendix is divided into three sections and provides detailed information on the two models used in the DODMDS study. The first section contains the introduction, the second section deals with the optimization model and the third deals with the simulation model. The material provided in this appendix is not intended to be specific to the point of allowing the reader to actually set up and run the models; that level of specificity can be found in the model user's manual for each of the models. Rather, the purpose here is to provide for the more technically oriented reader, the rationale and procedures for selecting the two models used; the nature of operation/computation for each model; the validation procedures followed prior to making 'runs for the record;' and the techniques used to interface the DODMDS data base with the models themselves.

AD-B029 892/7 PC **A07**/MF **A01**
Department of Defense, Washington, DC.
Department of Defense Materiel Distribution System Study (DODMDS). Volume III. Book 8, Appendices E, F, and G.
1 Jul 78, 150p
See also Volume 1, AD-B029 883L.
Distribution limitation now removed.

This report contains: Appendix E, Collocated reparable commodity-depot-customer combinations; DODMDS Model Baseline cost; Detailed comparative analysis of 90-Day Baseline, DODMDS refined-peacetime and DODMDS refined-mobilization systems; Appendix F, Annual Savings computation; one-time personnel costs; one-time materiel relocation cost; Recommended materiel relocation guidelines; and Appendix G, an Environmental Impact statement required for Installation reductions, transfers and closings.

15F. Nuclear Warfare

AD-B951 738/4 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Operation WIGWAM. Project 4.1. Weapons Placement at Operation WIGWAM.
1 Feb 80, 24p Rept no. DOE-WT-1033 (EX)
Extracted version of report dated May 55, AD-338 540.
Distribution limitation now removed.

The Zero Barge supported the bomb and housed various instrumentation projects at point zero. Special handling equipment was provided on the barge for lowering the bomb to explosion depth. The bomb was enclosed in a specially designed watertight case and connected to the barge electrically while submerged by a specially designed electrical cable. Preliminary tests were made to prove out the function of barge, the bomb case, the electrical cable, and the handling equipment. The bomb was successfully placed at the 2000-ft depth for the explosion on 14 May 1955. (Author)

AD-B951 739/2 PC **A02**/MF **A01**
General Electric Co., Santa Barbara, CA. TEMPO.
Operation WIGWAM. Project 4.2. Weapons Assembly.
1 Feb 80, 8p DOE-WT-1040(EX)
Contract DNA001-79-C-0455
Extracted version of report dated May 55. Prepared in cooperation with Sandia Corp., Albuquerque, NM.
Distribution limitation now removed.

Project 4.2 was requested to provide and assemble a warhead and firing system which would give a yield equivalent to 30 kt of TNT and be detonated at 2000 ft below the ocean's surface. This report tells how this was accomplished and brought to a successful conclusion on May 14, 1955, at 1300 PDT.

15G. Operations, Strategy, and Tactics

AD-A091 992/8 PC **A03**/MF **A01**
Army Combined Arms Combat Developments Activity, Fort Leavenworth, KS.
An HP-67 Combat Model.
Technical paper,
Reed E. Davis, Jr. Jul 77, 38p Rept no. CACDA-TR-8-77

Using a common data base and a few inputs during execution, this HP-67 Combat Model determines firers, targets, engagements, results, data base updates, and specified output for each time step of a tank-antitank battle. This base version represents only tank and antitank missiles on each side. However, the power of the HP-67 will accommodate expansions; e.g., artillery, mines, cannon-launched guided projectiles (CLGP), attack helicopters, and air defenses. Model mathematics are presented, and the model macroflow and overlay structure are described. An operators guide is included along with program listings for the 7 submodels and 20 subroutines. (Author)

AD-A092 066/0 PC **A13**/MF **A01**
IBM Federal Systems Div., Arlington, VA.
Division Real Time Applications Report (DIVRAS).
Final rept.
3 Aug 77, 289p
Contract DAAG39-77-C-0055

The purpose of the Division Real-Time applications specifications (DIVRAS) program is to improve the focus of division command and control toward the real-time execution of weapons and forces. This emphasis is consistent with recent tactical concepts and evolving doctrine requiring the division command post to be a highly mobile center capable of perceiving the battlefield situation and executing responsive actions in a matter of hours or minutes. At present the Tactical Operations System (TOS) which is to support the Division command and control functions does not have this emphasis. The existing TOS functions which have been defined and developed for the TOS Operable Segment (TOS2), are oriented toward intelligence analysis and the support of operational planning.

AD-A092 100/7 PC **A02**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
New Principles in Weapons.
10 Oct 80, 4p Rept no. FTD-ID(RS)T-1233-80
Edited trans. of Hang K'ung Chih Shih (China) n2 p20 1980.

No abstract available.

AD-A092 125/4 PC **A19**/MF **A01**
Advisory Group for Aerospace Research and Development, Neuilly-sur-Seine (France).
AGARD Index of Publications, 1977 - 1979.
Aug 80, 427p Rept no. AGARD-INDEX-77-79

This volume provides abstracts and indexes for AGARD publications published during the period 1977 - 1979. By an arrangement with the U.S. National Aeronautics and Space Administration (NASA) in Washington, the NASA computerized data base has been used to prepare this publication. Full bibliographic citations and abstracts for all the documents in this publication are given in the abstract section, which is organized in the major subject divisions and specific categories used by NASA in its abstract journals and bibliographies. The major subject divisions are listed in the Table of Contents, together with a note for each that defines its scope and provides any cross-references. Category breaks in the abstract section are identified by category number and title,

and a scope note. Within each category, the abstracts are arranged by series and year. Items from Scientific and Technical Aerospace Reports (STAR) appear before the unclassified items of limited circulation and the classified documents (entries here are unclassified). Examples of the typical citations with abstracts are given following the Table of Contents.

AD-A092 154/4 PC **A05**/MF **A01**
BDM Corp., Vienna, VA.
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
Final rept. 1 Jun-30 Oct 79,
W. T. Cooper, J. L. Gerrity, O. C. Doerflinger, J. C. Welch, and M. R. Baker. 30 Oct 79, 84p
BDM/W-79-662-TR, DNA-5093F
Contract DNA001-79-C-0351

This report presents a concept for theater integrated nuclear/nonnuclear operations which embraces peacetime planning, organization, and training for wartime operations prior to, concurrent with, and following first use of nuclear weapons by either side. The Central Battle and Battlefield Interdiction are both treated.

AD-A092 196/5 PC **A05**/MF **A01**
Naval Postgraduate School, Monterey, CA.
The Enrichment of Smoler's Model of Land Combat.
Master's thesis,
Glenn M. Mills. Sep 80, 83p

This thesis provides the student of combat modelling with a computer program for a relatively simple combat model that can be used in a classroom environment for study and analysis. The model is an aggregated, force-on-force ground-combat model that uses Lanchester's aimed-fire equations for casualty assessment. The original version of the model was developed in 1979 in a previous thesis, and shortfalls in the original model have been overcome, along with the addition of several enrichments to provide added user flexibility. A user's manual is provided to facilitate user access to the model from a permanent disk in the W. R. Church Computer Center. (Author)

AD-A092 207/0 PC **A03**/MF **A01**
Vector Research, Inc., Ann Arbor, MI.
User's Manual for the Tactical Operations System Analysis Package.
Interim rept. May 79-May 80,
Gary Witus, Mark Meerschaert, and Donald Kleist. May 80, 36p VRI-ARI-3-FR80-3, ARI-RN-80-14
Contract DAHC19-78-C-0027
See also AD-A092 205.

The overall objective of this project was to produceprocedural guidelines to be used by divisions in the field in developing standard operating procedures for the information management in the Tactical Operations System (TOS). The objective of this work was reinterpreted to include automated battlefield command control systems (ABCCS) in general, using TOS for an explicit example of the design, human factors, and management control considerations which must be addressed. This document provides instructions for the use and operation of a computer program package for the analysis of the Tactical Operations System (TOS). These programs were produced during the second phase of a project to develop information management concepts and procedures for automated battlefield command and control systems.

AD-A092 379/7 MF **A01**
Air Force Weapons Lab., Kirtland AFB, NM.
QUANTA - Users Manual.
Final rept.,
Maria E. Badessa. Jul 80, 178p AFWL-TR-79-193, AD-E200 607
Availability: Microfiche copies only.

This report provides instructions for using the QUANTA computer code, a code developed within the Applied Physics Division of the Air Force Weapons Laboratory to study the survivability of a flushing aircraft force from a nuclear attack of sea launched ballistic missiles. Included topics are structure of the input deck, description of the restart capabilities, details of array sizes, and a list of the error messages that might be encountered. The most current version of the QUANTA code is attached as Appendix A.

AD-B026 467/1 PC **A04**/MF **A01**
Naval Weapons Center, China Lake, CA.
Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
Target acquisition study rept. for period ending 1977,
Ronald A. Erickson, and Carol J. Burge. Jan 78, 59p NWC-TP-6005, GIDEP-E119-1143
Contract MIPR-RA02-77
Distribution limitation now removed.

This report presents a method for computing the probability of an aircrew being able to visually locate a ground target and launch a weapon against it. The major factors used in the computations are target acquisition performance, aircraft maneuvering requirements, terrain masking, visibility, and weapon operating time. Estimates of these factors are based on real-world data whenever possible, as opposed to mathematical modeling. The algorithm used to combine these factors is described, the computer program is given, and sample results are presented. The results show that the probability of releasing or launching a weapon on a target is quite low in many situations. (Author)

AD-B034 309/5 PC **A08**/MF **A01**
Army Science Board, Washington, DC.
Military Operations in Built-Up Areas (MOBA).
Final rept.,
James J. Renier, Albert B. Bishop, III, James M. Gavin, David R. Heebner, and Robert L. Hess. Jan 79, 154p
Distribution limitation now removed.

The report is a compendium of separate reports prepared by the Ad Hoc Group members which examine in detail nine functional areas of Military Operations in Built-Up Areas: Modeling, Simulation and Training; Mapping; Location and Identification of forces; Command and Control; Communications; Non-Chemical Weapons and Ammunition; Chemical Weapons and Defense; Radiological Defense; Mobility; Psychological Factors. These separate sections are preceded by an Executive Summary which presents the Terms of Rerference and which contains the General Findings of the Group and summarizes the Specific Findings contained in the separate sections of the report.

AD-845 654/3 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, Fort Buckner.
Operational rept. for period ending 31 Jul 68.
15 Aug 68, 16p OACSFOR-OT-UT-683362
Distribution limitation now removed.

No abstract available.

AD-845 655/0 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 63D Signal Battalion.
Operational rept. for period ending 31 Jul 68.
31 Jul 68, 40p OACSFOR-OT-UT-683151
Distribution limitation now removed.

No abstract available.

AD-855 117/8 PC **A04**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, 4-68. Communications and Electronics Lessons Learned.
Operations rept.
18 Oct 68, 54p OACSFOR-OT-RD-4-68
Distribution limitation now removed.

No abstract available.

AD-855 273/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 93rd Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69,
15 May 69, 16p OACSFOR-OT-UT-692113
Distribution limitation now removed.

No abstract available.

AD-855 322/4 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 36th Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
13 May 69, 16p OACSFOR-OT-UT-692117
Distribution limitation now removed.

No abstract available.

AD-855 356/2 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 164th Aviation Group.
Operational rept. for quarterly period ending 30 Apr 69.
15 May 69, 13p OACSFOR-OT-UT-692178
Distribution limitation now removed.

No abstract available.

AD-855 547/6 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 299th Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
30 Apr 69, 32p OACSFOR-OT-UT-692287
Distribution limitation now removed.

No abstract available.

AD-855 561/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 169th Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
9 May 69, 19p OACSFOR-OT-UT-692319
Distribution limitation now removed.

No abstract available.

AD-855 651/6 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 3D Battalion,506th Infantry.
Operational rept. for quarterly period ending 30 Apr 69.
3 May 69, 17p OACSFOR-OT-UT-692039
Distribution limitation now removed.

No abstract available.

AD-855 695/3 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, I Corps Tactical Zone Signal Group.
Operational rept. for quarterly period ending 30 Apr 69.
14 May 69, 14p OACSFOR-OT-UT-692185
Distribution limitation now removed.

No abstract available.

AD-855 900/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 84th Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
14 May 69, 15p OACSFOR-OT-UT-692087
Distribution limitation now removed.

No abstract available.

AD-855 901/5 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 588th Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
14 May 69, 17p OACSFOR-OT-UT-692079
Distribution limitation now removed.

No abstract available.

AD-856 079/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 31st Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.

9 May 69, 16p OACSFOR-OT-UT-692141
Distribution limitation now removed.

No abstract available.

AD-856 118/5 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 20th Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
30 Apr 69, 30p OACSFOR-OT-UT-692288
Distribution limitation now removed.

No abstract available.

AD-856 164/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 577th Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
12 May 69, 17p OACSFOR-OT-UT-692320
Distribution limitation now removed.

No abstract available.

AD-856 367/8 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 116th Engineer Battalion.
Operational rept. for period ending 30 Apr 69.
30 Apr 69, 17p OACSFOR-OT-UT-692176
Distribution limitation now removed.

No abstract available.

AD-856 713/3 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 46th Engineer Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
10 May 69, 30p OACSFOR-OT-UT-692330
Distribution limitation now removed.

No abstract available.

AD-856 745/5 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned Review of the HQ USEUCOM Command Center Project.
Rept. for Jul 64-Jul 68.
1969, 23p OACSFOR-OT-UT-692348
Distribution limitation now removed.

No abstract available.

AD-856 914/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 34th General Support Group.
Operational rept. for quarterly period ending 30 Apr 69.
7 Aug 69, 11p OACSFOR-OT-UT-692177
Distribution limitation now removed.

No abstract available.

AD-857 032/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 92nd Engineer Battalion.
Operational rept. for period ending 30 Apr 69.
1969, 20p OACSFOR-OT-UT-692331
Distribution limitation now removed.

No abstract available.

AD-857 128/3 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 165th Aviation Group.
Operational rept. for period ending 30 Apr 69.
14 May 69, 21p OACSFOR-OT-UT-692243
Distribution limitation now removed.

No abstract available.

AD-857 482/4 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 160th Signal Group.
Operational rept. for period ending 31 Jan 69.
15 Feb 69, 25p OACSFOR-OT-UT-691256
Distribution limitation now removed.

No abstract available.

AD-857 603/5 PC**$7.00***
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 815th Engineer Battalion (Construction).
Operational rept. for quarterly period ending 30 Apr 69.
30 Apr 69, 55p OACSFOR-OT-UT-692286
Distribution limitation now removed.

No abstract available.

AD-858 376/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 64th Quartermaster Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
5 May 39, 17p OACSFOR-OT-UT-692007
Distribution limitation now removed.

No abstract available.

AD-858 543/2 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 394th Transportation Battalion.
Operational rept. for period ending 30 Apr 69.
11 May 69, 23p OACSFOR-OT-UT-692352
Distribution limitation now removed.

No abstract available.

AD-858 938/4 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 972d Signal Battalion.
Operational rept. for period ending 31 Jan 69.
14 Feb 69, 15p OACSFOR-OT-UT-691227
Distribution limitation now removed.

No abstract available.

AD-858 944/2 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, U. S. Army Depot Long Binh.
Operational rept. for quarterly period ending 30 Apr 69.
10 May 69, 25p OACSFOR-OT-UT-692301
Distribution limitation now removed.

No abstract available.

AD-858 945/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, United States Army, Pacific.
Operational rept. for period ending 31 Jul 69.
16 Aug 69, 8p OACSFOR-OT-UT-693007
Distribution limitation now removed.

No abstract available.

AD-859 175/2 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 184th Ordnance Battalion (Ammo).
Operational rept. for quarterly period ending 30 Apr 69.
14 May 69, 39p OACSFOR-OT-UT-692292
Distribution limitation now removed.

No abstract available.

AD-859 256/0 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 125th Transportation Command.
Operational rept. for period ending 30 Apr 69.
11 May 69, 16p OACSFOR-OT-UT-692143
Distribution limitation now removed.

No abstract available.

AD-859 267/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 70th Engineer Battalion.
Operational rept. for period ending 30 Apr 69.
30 Apr 69, 23p OACSFOR-OT-UT-692175
Distribution limitation now removed.

No abstract available.

AD-859 278/4 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 2d Logistical Command.
Operational rept. for quarterly period ending 30 Apr 69.
26 May 69, 22p OACSFOR-OT-UT-692353
Distribution limitation now removed.

No abstract available.

AD-859 308/9 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters 4th Transportation Command.
Operational rept. for quarterly period ending 30 Apr 69.
4 Sep 69, 31p OACSFOR-OT-UT-692297
Distribution limitation now removed.

No abstract available.

AD-859 333/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 809th Engineer Battalion (Construction).
Operational rept. for quarterly period ending 30 Apr 69.
30 Apr 69, 17p OACSFOR-OT-UT-692354
Distribution limitation now removed.

No abstract available.

AD-859 337/8 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, Army Depot, Cam Ranh.
Operational rept. for period ending 30 Apr 69.
5 May 69, 26p OACSFOR-OT-UT-692018
Distribution limitation now removed.

No abstract available.

AD-859 379/0 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 79th Engineer Group, (Construction).
Operational rept. for quarterly period ending 30 Apr 69.
14 May 69, 18p OACSFOR-OT-UT-692342
Distribution limitation now removed.

No abstract available.

AD-859 381/6 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 24th Transportation Battalion (Terminal).
Operational rept. for quarterly period ending 30 Apr 69.
30 Apr 69, 16p OACSFOR-OT-UT-692022
Distribution limitation now removed.

No abstract available.

AD-859 526/6 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 14th Transportation Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
12 May 69, 18p OACSFOR-OT-UT-692273
Distribution limitation now removed.

No abstract available.

AD-859 530/8 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
Operational rept. for period ending 30 Apr 69.
30 Apr 69, 35p OACSFOR-OT-UT-692173
Distribution limitation now removed.

No abstract available.

AD-859 531/6 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.

Lessons Learned, Headquarters, U. S. Army Depot, Qui Nhon.
Operational rept. for period ending 30 Apr 69.
7 May 69, 34p OACSFOR-OT-UT-692302
Distribution limitation now removed.

No abstract available.

AD-859 596/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 124th Transportation Command (Terminal A).
Operational rept. for period ending 30 Apr 69.
15 May 69, 23p OACSFOR-OT-UT-692223
Distribution limitation now removed.

No abstract available.

AD-859 837/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 35th Engineer Group (Construction).
Operational rept. for period ending 30 Apr 69.
30 Apr 69, 18p OACSFOR-OT-UT-692215
Distribution limitation now removed.

No abstract available.

AD-859 902/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters 44th Engineer Group (Construction).
Operational rept. for quarterly period ending 30 Apr 69.
15 May 69, 22p OACSFOR-OT-UT-692355
Distribution limitation now removed.

No abstract available.

AD-859 903/7 PC**$7.00***
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters 507th Transportation Group (Movement Control).
Operational rept. for quarterly period ending 30 Apr 69.
15 May 69, 74p OACSFOR-OT-UT-692349
Distribution limitation now removed.

No abstract available.

AD-859 909/4 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 538th Engineer Battalion.
Operational rept. for the period ending 30 Apr 69.
30 Apr 69, 25p OACSFOR-OT-UT-692351
Distribution limitation now removed.

No abstract available.

AD-859 926/8 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 864th Engineer Battalion (Construction).
Operational rept. for period ending 30 Apr 69.
20 Apr 69, 21p OACSFOR-OT-UT-692174
Distribution limitation now removed.

No abstract available.

AD-859 944/1 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, U. S. Army Headquarters Area Command.
Operational rept. for period ending 31 Jul 69.
9 Aug 69, 9p OACSFOR-OT-UT-693187
Distribution limitation now removed.

No abstract available.

AD-860 083/5 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, Da Nang Signal Battalion.
Operational rept. for period ending 30 Apr 69.
1 May 69, 12p OACSFOR-OT-UT-692217
Distribution limitation now removed.

No abstract available.

AD-860 216/1 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 9th Logistical Command.
Operational rept. for quarterly period ending 30 Apr 69.
14 May 69, 21p OACSFOR-OT-UT-692016
Distribution limitation now removed.

No abstract available.

AD-860 217/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 44th Medical Brigade.
Operational rept. for quarterly period ending 31 Jul 69.
15 Aug 69, 16p OACSFOR-OT-UT-693188
Distribution limitation now removed.

No abstract available.

AD-860 218/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 63rd Signal Battalion (Army).
Operational rept. for quarterly period ending 30 Apr 69.
30 Apr 69, 20p OACSFOR-OT-UT-692218
Distribution limitation now removed.

No abstract available.

AD-860 344/1 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 20th Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
31 Jul 69, 21p OACSFOR-OT-UT-693070
Distribution limitation now removed.

No abstract available.

AD-860 345/8 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 31st Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
8 Aug 69, 15p OACSFOR-OT-UT-693278
Distribution limitation now removed.

No abstract available.

AD-860 346/6 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 34th Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
14 Aug 69, 21p OACSFOR-OT-UT-693254
Distribution limitation now removed.

No abstract available.

AD-860 347/4 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 35th Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
10 Aug 69, 12p OACSFOR-OT-UT-693052
Distribution limitation now removed.

No abstract available.

AD-860 461/3 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 68th Medical Group.
Operational rept. for period ending 31 Jul 69.
13 Aug 69, 10p OACSFOR-OT-UT-693258
Distribution limitation now removed.

No abstract available.

AD-860 632/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 84th Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
14 Aug 69, 16p OACSFOR-OT-UT-693036
Distribution limitation now removed.

No abstract available.

AD-860 678/2 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 41st Signal Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
13 May 69, 17p OACSFOR-OT-UT-692192
Distribution limitation now removed.

No abstract available.

AD-860 742/6 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, Phu Lam Signal Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
9 May 69, 13p OACSFOR-OT-UT-692228
Distribution limitation now removed.

No abstract available.

AD-861 029/7 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 165th Aviation Group.
Operational rept. for quarterly period ending 31 Jul 69.
15 Aug 69, 37p OACSFOR-OT-UT-693257
Distribution limitation now removed.

No abstract available.

AD-861 030/5 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 62d Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
15 Aug 69, 14p OACSFOR-OT-UT-693285
Distribution limitation now removed.

No abstract available.

AD-861 031/3 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 34th Engineer Group.
Operational rept. for quarterly period ending 31 Jul 69.
1 Aug 69, 25p OACSFOR-OT-UT-693286
Distribution limitation now removed.

No abstract available.

AD-861 032/1 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 43d Signal Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
May 69, 25p OACSFOR-OT-UT-692194
Distribution limitation now removed.

No abstract available.

AD-861 033/9 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 36th Signal Battalion.
Operational rept. for quarterly period ending 31 Jan 69.
14 Feb 69, 22p OACSFOR-OT-UT-691225
Distribution limitation now removed.

No abstract available.

AD-861 474/5 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 52d Signal Battalion.
Operational rept. for quarterly period ending 30 Apr 69.
14 May 69, 22p OACSFOR-OT-UT-692208
Distribution limitation now removed.

No abstract available.

AD-861 493/5 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.

Lessons Learned, Headquarters, 3d Surgical Hospital.
Operational rept. for quarterly period ending 31 Jul 69.
4 Aug 69, 12p OACSFOR-OT-UT-693042
Distribution limitation now removed.

No abstract available.

AD-861 494/3 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 3d Field Hospital.
Operational rept. for quarterly period ending 31 Jul 69.
1 Aug 69, 19p OACSFOR-OT-UT-693041
Distribution limitation now removed.

No abstract available.

AD-861 495/0 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, US Army Regional Communications Group (Vietnam).
Operational rept. for quarterly period ending 30 Apr 69.
15 May 69, 17p OACSFOR-OT-UT-692214
Distribution limitation now removed.

No abstract available.

AD-861 496/8 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 1st Signal Brigade (USASTRATCOM).
Operations rept. for quarterly period ending 31 Jul 69.
17 Aug 69, 33p OACSFOR-OT-UT-693297
Distribution limitation now removed.

No abstract available.

AD-861 505/6 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 45th Surgical Hospital.
Operational rept. for quarterly period ending 31 Jul 69.
31 Jul 69, 10p OACSFOR-OT-UT-693120
Distribution limitation now removed.

No abstract available.

AD-861 512/2 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 29th Evacuation Hospital.
Operational rept. for quarterly period ending 31 Jul 69.
1 Aug 69, 13p OACSFOR-OT-UT-693045
Distribution limitation now removed.

No abstract available.

AD-861 521/3 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 29th Signal Group.
Operational rept. for quarterly period ending 30 Apr 69.
15 May 69, 23p OACSFOR-OT-UT-692233
Distribution limitation now removed.

No abstract available.

AD-861 529/6 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned. Headquarters, 19th Engineer Battalion (Combat).
Operational rept. for quarterly period ending 31 Jul 69.
11 Aug 69, 21p OACSFOR-OT-UT-693110
Distribution limitation now removed.

No abstract available.

AD-861 530/4 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned. Headquarters, 27th Engineer Battalion (Combat).
Operational rept. for quarterly period ending 31 Jul 69.
7 Aug 69, 13p OACSFOR-OT-UT-693113
Distribution limitation now removed.

No abstract available.

AD-861 531/2 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned. Headquarters, 12th Signal Group.
Operational rept. for quarterly period ending 31 Jul 69.
8 Aug 69, 14p OACSFOR-OT-UT-693182
Distribution limitation now removed.

No abstract available.

AD-861 532/0 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned. Headquarters, 2nd Civil Affairs Company.
Operational rept. for quarterly period ending 31 Jul 69.
15 Aug 69, 19p OACSFOR-OT-UT-693210
Distribution limitation now removed.

No abstract available.

AD-861 538/7 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned. Headquarters, US Army STRATCOM Long Lines Battalion North.
Operational rept. for quarterly period ending 30 Apr 69.
11 May 69, 26p OACSFOR-OT-UT-692229
Distribution limitation now removed.

No abstract available.

AD-861 633/6 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 40th Signal Battalion (Construction).
Operational rept. for quarterly period ending 30 Apr 69.
17 May 69, 19p OACSFOR-OT-UT-692250
Distribution limitation now removed.

No abstract available.

AD-861 634/4 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 70th Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
31 Jul 69, 30p OACSFOR-OT-UT-693145
Distribution limitation now removed.

No abstract available.

AD-861 636/9 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
Operational rept. for quarterly period ending 31 Jul 69.
31 Jul 69, 31p OACSFOR-OT-UT-693148
Distribution limitation now removed.

No abstract available.

AD-861 670/8 PC **A03**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 169th Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
15 Aug 69, 29p OACSFOR-OT-UT-693313
Distribution limitation now removed.

No abstract available.

AD-861 777/1 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 86th Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
9 Aug 69, 21p OACSFOR-OT-UT-693055
Distribution limitation now removed.

No abstract available.

AD-861 827/4 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 538th Engineer Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
2 Aug 69, 24p OACSFOR-OT-UT-693050
Distribution limitation now removed.

No abstract available.

AD-861 828/2 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 519th Transportation Battalion.
Operational rept. for quarterly period ending 31 Jul 69.
31 Jul 69, 12p OACSFOR-OT-UT-693080
Distribution limitation now removed.

No abstract available.

AD-861 834/0 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 29th Civil Affairs Company.
Operational rept. for quarterly period ending 31 Jul 69.
10 Nov 69, 20p OACSFOR-OT-UT-693017
Distribution limitation now removed.

No abstract available.

AD-861 915/7 PC **A02**/MF **A01**
Adjutant General's Office (Army), Washington, DC.
Lessons Learned, Headquarters, 41st Civil Affairs Company.
Operational rept. for quarterly rept. ending 31 Jul 69.
19 Aug 69, 16p OACSFOR-OT-UT-693180
Distribution limitation now removed.

No abstract available.

17

NAVIGATION, COMMUNICATIONS, DETECTION, AND COUNTERMEASURES

17A. Acoustic Detection

AD-A091 998/5 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution MA.
Estimation of Differential Doppler Shifts.
Technical rept.,
Peter M. Schultheiss, and Ehud Weinstein. 18 May 79, 13p Rept nos. WHOI-80-46, WHOI-CONTRIB-4419
Contracts N00014-77-C-0196, N66001-76-C-1082
Pub. in Jnl. of the Acoustical Society of America, v66 n5 p1412-1419 Nov 79. Sponsored in part by Contract N66001-77-C-0396. Prepared in cooperation with Yale Univ., New Haven, CT.

No abstract available.

AD-A092 181/7 PC **A03**/MF **A01**
Naval Ocean Systems Center, San Diego, CA.
Nonresonant Acoustic Projector Project. Mechanical 5-50 Hz Device Provides Stable Underwater Acoustic Output with Frequency and Amplitude Controllable and Independent of Depth.
Final rept. 1 May 79-30 Apr 80,
H. A. Wilcox. 12 Jun 80, 48p Rept no. NOSC/TR-579

The nonresonant acoustic projector was designed, fabricated, and tested without significant difficulties. It met all its specifications, and it proved the principle of a mechanical projector whose operating depth, frequency, and amplitude of piston throw can be simultaneously or independently varied without incurring significant interactions among the variables. The validity of considering the nonresonant acoustic projector as a standard source was demonstrated. (Author)

AD-A092 195/7 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Implementation of the Phase Difference Trace Function for a Circular Array.
Master's thesis,
George William Rollings. Jun 80, 59p

Components necessary for the implementation of the trace function concept in a circular array were designed and constructed. The performance of the degenerate trace function for a narrowband signal in the presence of correlated noise was examined. The results agree with theoretical values and illustrate the threshold effect and phase unwrapping problems. Using a 97.5cm diameter array in air, for a population base of ten sets of data, trace function measurements were taken at various signal to noise ratios between 28.2dB and -7.8dB. Calculated beamwidths, taken to be twice the standard deviation of the estimated bearing, were as follows: 28.2dB - 1.6 deg, 10.2dB - 2.2 deg, -1.8dB - 2.8 deg. The threshold appeared to be in the range of -4.8dB. (Author)

AD-A092 303/7 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Application of Kalman Filtering to Torpedo Tracking.
Master's thesis,
Paul A. O'Brien. Sep 80, 128p

A sequential Extended Kalman filter routine was developed to provide real time estimates of torpedo position and depth on the three dimensional underwater tracking range at the Naval Torpedo Station, Keyport, Washington. Filter measurements consisted of acoustic pulse transit times from the torpedo to a receiving hydrophone array. These measurements, which are nonlinear functions of the position and depth coordinates, were linearized and the filter gains calculated on-line. Tests were conducted using simulated torpedo trajectories that traversed both single and multiple hydrophone arrays. It was found that filter performance was dependent on system noise and the distance the torpedo was from the hydrophone array. Position and depth errors ranged between 0 and 10 feet. (Author)

AD-A092 367/2 PC **A04**/MF **A01**
Defence Research Establishment Atlantic, Dartmouth (Nova Scotia).
A Study of Filled and Sparse Line Array Beamformers.
Technical memo.,
R. S. Walker. Sep 80, 69p Rept no. DREA-TM-80/G
Summary in French.

The paper considers various methods of frequency-domain beamforming for a line array of hydrophones. The line array geometries are restricted to uniform sensor spacings (i.e. filled array) or a geometry in which sensors are eliminated from the filled structure (sparse array). The methods to be examined include the conventional phase-to-plane beamformer (CB), the data-adaptive Minimum Variance beamformer (MVB), and the Principal-Solution beamformer (PSB). The beamformer performance is assessed on the basis of two criteria. The first is the ability of the beamformer to map the directionality of the acoustic field. The integration time uesd in producing the map is unrestricted: hence, only first-order beamformer statistics influence the performance. The second criterion is the ability to detect narrowband, directional signals against the noise. Here the integration time is finite, and higher-order beamformer statistics become important. We shall show that the PSB has advantages over the CB for mapping of the directionality. However, no advantage exists in the signal detection application. The MVB provides the directionality map that is least influenced by leakage. However, its detection performance is superior to that of the CB only if the noise field is highly directional. (Author)

AD-A092 390/4 PC **A17**/MF **A01**
Naval Research Lab., Washington, DC.
Forecast of Remote Underwater Sensing Technology.
Final rept. May 79-Jul 80,
Vincent A. Del Grosso, and Perry B. Alers. Jul 80, 381p USCG-D-38-80
Contract MIPR-Z70099-9-94080

A report has been prepared for the United States Coast Guard which develops 10-year and 25-year forecasts of the evolution of underwater remote sensing system technologies. Included is a delineation of the status of those technologies identified as having present or potential utility to current and projected Coast Guard missions. A modified Delphi technique was utilized to develop the forecasts wherein 131 questionnaires dealing with 9 specific technologies were sent to 56 separate organizations. The final positive response exceeded 50%. (Author)

AD-A092 463/9 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
A Wide Range Sonar System for Oceanic Investigations.
Technical rept.,
F. R. Hess, and M. H. Orr. Nov 80, 12p Rept nos. WHOI-80-61, WHOI-CONTRIB-4394
Contracts N00014-77-C-0196, NOAA-04-8-M01-43
Pub. in Proceedings of Oceans, p27-32 Sep 79.

No abstract available.

PATENT-4 225 954 Not available NTIS
Department of the Navy, Washington, DC.
Acoustical Deverberator.
Patent,
Herman Medwin. Filed 21 Dec 78, patented 30 Sep 80, 7p AD-D007 873/3, PAT-APPL-972 124 Supersedes PAT-APPL-972 124-78, AD-D005 733.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

This report describes an acoustical deverberator for eliminating the reverberation from a sound signal originating with a transient sound source in shallow water. The sound signal is received by a single hydrophone and autocorrelated to determine the time differences between the direct signal and the bottom surface reflected signals. Together with the surface and bottom reflection coefficients and known depths of the hydrophone and water, the time differences are used to determine corrections which are applied to the received sound signal. The result is a clean sound signal free from interfering reverberation.

17B. Communication

AD-A092 010/8 PC **A12**/MF **A01**
GTE Sylvania, Inc., Needham Heights, MA. Communications Systems Div.
Speech Algorithm Optimization at 16 KBPS.
Final rept. Jul 79-Sep 80,
R. S. Cheung, S. Y. Kwon, and A. J. Goldberg. 30 Sep 80, 259p
Contract DCA100-79-C-0038

This report describes the design of a 16 Kb/s Split-Band Adaptive Predictive Coder (SBAPC) whose high quality processed speech compares favorably with that of the Continuously Variable Slope Delta-modulator (CVSD) in both back-to-back and simulated tactical situations. Operations of this algorithm include the partitioning of the input frequency band evenly into two subbands and the encoding of the subband waveform using Adaptive Predictive Coding (APC). The results of our investigation on quadrature mirror filters, tradeoffs between various APC parameters, noise shaping techniques, and adaptive bit allocations are presented. This report also gives a detailed discussion on the utilization of noise suppression techniques in reducing stationary background noise and forward error-correcting codes in maintaining the SBAPC performance at 10 to the minus 2 channel error rate. (Author)

AD-A092 030/6 PC **A15**/MF **A01**
Signatron, Inc., Lexington, MA.
Adaptive Antenna Control (AAC) Program.
Test rept. Jul 77-Oct 79,
Peter Monsen, and John Eschle. Sep 80, 329p
CSA-76-8085-6
Contract DAAB07-76-C-8085
Prepared in cooperation with RF Systems, Inc.

This is the test report for the Adaptive Antenna Control Program (Contract No. DAAB07-76-C-8085). The program is under the management of the U.S. Army Communications Systems Agency, and monitored by the U.S. Army Communications R&D Command both of Ft. Monmouth, New Jersey. SIGNATRON, Inc. and RF Systems, Inc. (as antenna sub-contractor) had the responsibility for executing the program tasks. This report summarizes these tasks and includes the results of the factory and field test phases. (Author)

AD-A092 055/3 PC **A04**/MF **A01**
California Univ., Berkeley. Electronics Research Lab.
Network Management Research.
Technical rept.,
C. V. Ramamoorthy. Sep 80, 55p ARO-16984.1-A-EL
Contract DAAG29-79-C-0171

In our research in distributed data processing systems, we have developed design principles, algorithm concepts, feasibility criteria, and quantitative trade-offs that can be used in the creation of network management functions. In particular, we concentrated on the following five areas: (1) Routing Control and Relay Management; (2) Reconfiguration Control; (3) Interconnection Network Design; (4) Deadlock Detection; and (5) Scheduling. The results we have developed will provide guidelines and design laws for the systematic design and construction of distributed data processing systems such that the users' requirements are satisfied. By using these results, we will be able to develop reliable, effective, modifiable networks with low cost and lead times.

AD-A092 065/2 PC **A22**/MF **A01**
Bolt Beranek and Newman, Inc., Cambridge, MA.
ARPANET Routing Algorithm Improvements. Volume I.
Annual technical rept. 1 Aug 79-1 Sep 80,
E. C. Rosen, J. Mayersohn, P. J. Sevcik, G. J. Williams, and R. Attar. Aug 80, 511p Rept no. BBN-4473
Contract MDA903-78-C-0129, ARPA Order-3491

This report covers work performed during the first year of the extension of the ARPANET Routing Algorithm Improvements Contract. Network buffer management issues are discussed and a new buffer management scheme for the ARPANET is designed. Logical addressing is discussed, and a design is given for a logical addressing scheme suitable for ARPANET or DIN II. The applicability of ARPANET Routing to DIN II is evaluated. The possibility of extending ARPANET's routing algorithm to provide multiple routes between a given pair of nodes is discussed, and a preliminary design is proposed, which, however, still contains a number of unsolved problems. A set of metrics for evaluating congestion control algorithms is proposed, and AUTODIN II congestion control scheme is evaluated. A new congestion control scheme, suitable for networks containing ARPANET routing, is proposed. BBN's network simulator is described, and its command language is specified. Various simulation design decisions are discussed. The statistical properties of simulation data are discussed and various techniques for analyzing and interpreting simulation data are proposed. (Author)

AD-A092 096/7 PC **A02**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
Laser Light Fiber Communication,
Huang Dingguo. 14 Oct 80, 17p Rept no. FTD-ID(RS)T-1170-80

Edited trans. of Wuxiandian (China) n5 p1-3, 25 May 79.

No abstract available.

AD-A092 113/0 PC **A03**/MF **A01**
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
Semiannual technical summary rept. 1 Oct 79-31 Mar 80,
Clifford J. Weinstein, and Peter E. Blankenship.
31 Mar 80, 45p ESD-TR-80-71
Contract F19628-80-C-0002, ARPA Order-3673
See also Rept. no. ESD-TR-80-72.

This report describes work performed on the Packet Speech Systems Technology Program sponsored by the Information Processing Techniques Office of the Defense Advanced Research Projects Agency during the period 1 October 1979 through 31 March 1980. (Author)

AD-A092 114/8 PC **A03**/MF **A01**
Naval Research Lab., Washington, DC.
Performance of ANDVT HF Modem with Peak Clipping.
Memorandum rept.,
Wayne M. Jewett, and Raymond Cole, Jr. 30 Oct 80, 27p Rept no. NRL-MR-4374

The performance of the signal design for the ANDVT hf modem was investigated for the Gaussian channel with variable amounts of peak clipping on the modulator output. The advantage is an increase in average power when operating in a peak power limiting situation. A recommendation is made for use of 8.0 dB of clipping on the 16 tone DPSK signal used for transmitting the message indicator and 9.5 dB of clipping on the 39 tone DPSK signal used for transmitting digital voice. (Author)

AD-A092 122/1 PC **A02**/MF **A01**
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
Threshold Effect on Error Probability in QAM Systems,
Yih-Chyun Jenq, Bede Liu, and John B. Thomas.
2 Apr 79, 7p ARO-16011.5-EL
Contract DAAG29-79-C-0024
Pub. in IEEE Transactions on Communications, vCOM-28 n7 p1047-1052 Jul 80. Prepared in cooperation with State Univ. of New York at Stony Brook, NY. Sponsored in part by Grant NSF-ENG76-19808.

No abstract available.

AD-A092 171/8 PC **A03**/MF **A01**
GTE Sylvania, Inc., Needham Heights, MA. Electronic Systems Group-Eastern Div.
Wideband Speech Multiple Rate Processor Study. Part I.
Final rept. Sep 77-Sep 79,
R. S. Cheung, and A. J. Goldberg. 1 Oct 79, 50p
Contract DCA100-77-C-0054
See also Part 2, AD-A092 172.

This report presents the results of our investigations on the utility of multiple-rate processing (MRP) terminals in facilitating wideband/narrowband communications. In addition, the design and development of a real-time embedded MRP scheme which transmits speech at the data rates of 2.4, 8.0, 9.6. and 16.0 Kb/s is discussed. This report is written in two parts. Part I contains a description of non-embedded and embedded MRP schemes. Details treatments on two embedded algorithms, namely, the Linear Predictive Coding/Adaptive Predictive Coding with Adaptive Quantization (APC/APCQ); the Linear Predictive Coding/Split-Band Voice Coding (LPC/SBVC) are included.

AD-A092 172/6 PC **A03**/MF **A01**
GTE Sylvania, Inc., Needham Heights, MA. Electronic Systems Group-Eastern Div.
Wideband Speech Multiple Rate Processor Study. Part II.
Final rept. Sep 77-Sep 79,
R. S. Cheung, and A. J. Goldberg. 1 Oct 79, 29p
Contract DCA100-77-C-0054
See also Part 1, AD-A092 171.

This report presents the results of our investigations on the utility of multiple-rate processing (MRP) terminal in facilitating wideband/narrowband communications. In addition, the design and development of a realtime embedded MRP scheme which transmits speech at the data rates of 2.4, 8.0, 9.6 and 16.0 Kb/s is discussed. This report is written in two parts. Part II contains the information on the real-time implementation of the LPC/SBVC coder on the government-owned Sylvania Programmable Signal Processors (PSP). The hardware and programming aspects of the high-speed multiplier-accumulator in the PSP's are also discussed.

AD-A092 198/1 PC **A10**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Efficient Coding of the Prediction Residual.
Doctoral thesis,
Legand L. Burge, Jr. 27 Dec 79, 217p Rept no. AFIT-CI-79-235D

This thesis presents an efficient method of coding the prediction residual using the technique of subband coding designed at the bit rate of 9600 bits/second. The energy of the prediction residual is used to distribute the bit allocation by sub-bands such that the perceptual criteria is preserved. The perception is enhanced by transitional information within the phoneme connections of speech by a technique that weights the energy based on a normalization factor. A three-tier phoneme classification is derived from an energy study of the phonemes for the prediction residual. With this it is shown that speech intelligibility is enhanced in the coding scheme. The prediction residual is compared with the glottal waveform. In association with these results, a new technique for pitch extraction is presented using the prediction as the input signal to calculate pitch. An adequate indication of coder quality is described using various types of signal-to-noise ratios. (Author)

AD-A092 205/4 PC **A05**/MF **A01**
Vector Research, Inc., Ann Arbor, MI.
Analysis of Information Flow in the Tactical Operations System (TOS).
Interim rept. May 79-May 80,
Gary Witus, Robert W. Blum, and Mark Meerschaert. May 80, 96p VRI-ARI-3-FR79-4, ARI-RN-80-12
Contract DAHC19-78-C-0027
See also AD-A092 206.

This report describes the results of an analysis of the Tactical Operations System (TOS) communications subsystem to develop information management concepts and procedures for automated battlefield command and control systems. The research effort evolved from previous work to develop a design/decision aid (DDA) for the evaluation of alternative information management policies. The original DDA model was concerned exclusively with the Division Computing Center. The original effort was expanded to encompass both the distributed processors -- the Tactical Computer Systems and Tactical Computer Terminals -- and the supporting communications. The resulting model not only provides a tool for the analysis of TOS and its component parts, but also has the potential for application to other distributed command support systems with a central node and data base. (Author)

AD-A092 206/2 PC **A05**/MF **A01**
Vector Research, Inc., Ann Arbor, MI.
Description of the Tactical Operations System Information Flow Model.
Interim rept. May 79-May 80,
Gary Witus, Robert W. Blum, and Mark Graulich.
May 80, 80p VRI-ARI-3-FR79-3, ARI-RN-80-13
Contract DAHC19-78-C-0027
See also AD-A092 207.

This report describes a mathematical model of the Division Tactical Operations System (DIV TOS) to develop information management concepts and procedures for automated battlefield command and control systems. The research effort evolved from previous work to develop a design/decision aid (DDA) for the evaluation of alternative information management policies. The original DDA model was concerned only with the Division Computing Center. The original effort was expanded to encompass both the distributed processors -- the Tactical Computer System and Tactical Computer Terminals--- and the supporting communications. The resulting model not only provides a tool for the analysis of TOS and its component parts, but also has the potential for application to other distributed command support systems with a central node and data base.

AD-A092 208/8 PC **A08**/MF **A01**
Vector Research, Inc., Ann Arbor, MI.
Programmer's Manual for the Tactical Operations System Analysis Package.
Interim rept. May 79-May 80,
Gary Witus, Mark Meerschaert, and Donald Kleist. May 80, 168p VRI-ARI-3-FR80-4, ARI-RN-80-15
Contract DAHC19-78-C-0027
See also AD-A092 207.

The purpose of this volume is to document the computer programs and data structures in the TOS analysis package in sufficient detail to enable a programmer to modify the package or transfer it between computer systems. The volume is organized into five chapters and three appendices. The remainder of this chapter discusses the overall organization of the analysis package. Chapters 2.0 through 5.0 discuss, in turn, each of the four computer programs in the package and present flowcharts, descriptions of the variables and subroutines, and discussions of the code. Appendix A contains a listing of the four programs. Appendix B contains a variable name cross-reference dictionary. Appendix C contains a statement label dictionary. All programs are written in standard FORTRAN IV and contain internal commentary. They are currently implemented on the Amdahl 470/V7 computer at The University of Michigan. The analysis package performs three basic functions: (1) interacting with the operator to set, alter, or examine the values of the inputs; (2) performing the computations specified by the mathematics of the model; and (3) displaying the outputs. The package consists of four computer programs and on external data structure.

AD-A092 272/4 PC **A06**/MF **A01**
Delta Information Systems, Inc., Jenkintown, PA.
Use of a Microprocessor to Implement an ADCCP Protocol (Federal Standard 1003).
Final rept.,
Stephen J. Urban, and Richard Schaphorst. Jul 80, 111p NCS-TIB-80-7
Contract DCA100-79-C-0050

The objective of this program is to develop block diagrams, flow charts, and computer programming for the unbalanced normal, balanced asynchronous and unbalanced asynchronous class of procedures in accordance with Federal Standard 1003 'Telecommunications: Synchronous Bit Oriented Data Link Control Procedures (Advanced Data Communication Control Procedures)'. The purpose of this effort is to determine the feasibility of using the M6800 or similar microprocessor, to implement this type of protocol, and to obtain an estimate of memory and processor resources that would be required. (Author)

AD-A092 394/6 PC **A08**/MF **A01**
National Communications System, Washington, DC.
Revised CCITT Recommendation X.25 1980.
Final rept.,
Harold C. Folts. Aug 80, 159p Rept no. NCS-TIB-80-5

This report contains the final draft of CCITT Recommendation X.25 as approved February 1980. X.25 defines the interface procedures for connection of user terminals to Public Packet-Switched Data Networks. The report also provides the background and a summary of the revisions made for this new version of X.25. (Author)

AD-A092 395/3 PC **A05**/MF **A01**
Delta Information Systems, Inc., Jenkintown, PA.
Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
Final rept.,
Steve Urban, and Richard Schaphorst. Aug 80, 100p NCS-TIB-80-6

Contract DCA100-80-M-0145
See also Rept. nos. NCS-TIB-79-8, AD-A075 211, NCS-TIB-79-7, AD-A074 367, NCS-TIB-79-9, AD-A077 830, NCS-TIB-79-10, AD-A077 829.

This Technical Information Bulletin (TIB) describes the measurement of Compression factor and error sensitivity factor of the Modified READ two-dimensional facsimile coding technique. The TIB contains detailed flow charts and computer programming associated with this coding scheme. Compression factor and error sensitivity together with statistical data have also been tabulated. This TIB is a companion document to NCS TIB's 79-7, 79-8, 79-9, and 79-10. (Author)

AD-B000 632/0 PC **A10**/MF **A01**
Computer Sciences Corp., Falls Church, VA.
Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
Final rept.,
R. M. Houston. Oct 74, 215p RADC-TR-74-258-Vol-1-App
Contract F30602-72-C-0504
Appendix to Volume 1, AD-B000 631L.
Distribution limitation now removed.

Extensive measurements and predictions have been made at data rates up to 10 megabits per second to characterize the digital transmission of binary (+1,-1) signals over balanced pair cables up to 100,000 feet in length. This report presents the results of experimentation concerned with the transmission of digital signals using existing Air Force multi-pair cables and common station equipment. Integrated circuit line drivers and receivers were used for the Balanced Transmission Devices. It has been demonstrated that the transmission capability of existing cable plant can be predicted. Volume I of the report presents the reduced data from the entire test program including laboratory tests, field tests at Patrick Air Force Base, and computer simulation. Volume II is a handbook for the use of Air Force Communication Services to engineer digital cable transmission facilities. The handbook contains tutorial material as well as step-by-step procedures for the design of digital cable systems. (Author)

AD-904 472/8 PC **A14**/MF **A01**
Naval Undersea Center, San Diego, CA.
Handbook of Underwater Imaging System Design.
Test and evaluation rept. Jul 71-Jul 72,
C. J. Funk, S. B. Bryant, and P. J. Heckman, Jr.
Jul 72, 310p Rept no. NUC-TP-303
Distribution limitation now removed.

The resources necessary to reliably predict optical viewing system performance in various water conditions have been summarized in handbook format. Multiple scattering effects are included. The handbook introduces the basic optical properties of seawater, conventional underwater television systems, and extended-range techniques. A nomogram is provided as a simple graphical tool for the design of conventional underwater television systems. A more general method, consisting of sets of formulas and data tables, is developed for predicting the performance of a variety of viewing systems as functions of hardware components (sources and receivers), practical viewing geometries, and water conditions. The formulas are summarized in a simple table, and sample calculations are presented. Finally, the analytical model is verified by comparison with experimental data. (Author)

AD-906 757/0 PC **A09**/MF **A01**
Space and Missile Systems Organization, Los Angeles, CA.
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
Final rept.
Jan 73, 180p Rept nos. SAMSO/XRS-71-1-Vol-7, SAMSO-TR-72-122-Vol-7
See also Volume 8, AD-522 216L.
Distribution limitation now removed.

The purpose of this study of integrated design requirements, as part of the CCIP-85 study, is to determine from previous project experience the necessary conditions for effective integrated design of Air Force command and control information-processing systems. The study identifies promising areas and approaches for effecting advantageous tradeoffs between software and hardware and identifies potential new tools and approaches for improving the integrated design process. The integrated design process is defined here as a plan for the total process of analysis, design, acquisition, and test to ensure an operationally effective mission capability for command and control information processing in the decade between 1980 and 1990. (Author)

AD-910 973/7 PC **A05**/MF **A01**
Physical Dynamics Inc Detroit Mich
Submarine Communication at ULF Frequencies. I. A Program of Investigation.
Semi-annual technical rept. Mar-Aug 72,
Walter Podney. Sep 72, 89p PD-72-025, RADC-TR-72-338
Contract F30602-72-C-0495, Grant ARPA Order-2124
Distribution limitation now removed.

Electromagnetic energy in the ultra-low-frequency (ULF) spectral range (0.001 Hz to 5 Hz) penetrates sea water to depths of 250 meters or more before being appreciably absorbed. Because of the transparency of sea water to electromagnetic energy in the ULF band and the existence of global propagation paths at ULF frequencies, ULF carrier frequencies could provide a useful means of transmitting information to deeply submerged submarines. Information transfer at ULF carrier frequencies is limited to rates of about 1 bit/sec, so that communication with submarines using ULF carrier frequencies is suited to fulfilling an alerting or command and control function. Although ULF carrier frequencies afford a promising means of transmitting information to deeply submerged submarines, the concept of submarine communication at ULF frequencies is beset with fundamental uncertainties. Generation of signals at frequencies in the ULF band has yet to be demonstrated. Dispersion and absorption along global propagation paths have not been definitely assessed. And reception of signals on sea-based platforms has not been examined. Observations of naturally occurring signals in the ULF band, known historically as geomagnetic micropulsations, indicate that signal generation and propagation are possible within the near-Earth plasma. This report delineates and examines technical problems associated with signal generation, propagation, and reception from the point-of-view of submarine communication at ULF frequencies.

AD-918 631/3 PC **A04**/MF **A01**
Computer Sciences Corp., Falls Church, VA.
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
Technical rept.,
Douglas O. Alwine, John R. Bradley, Charles L. Fruchter, Robert A. Glicksman, and John F. Greiner. Apr 74, 52p CSC-R-3301-1, AFAL-TR-74-81-Vol-1
Contract F33615-72-C-2187
Distribution limitation now removed.

This volume is intended to be used by the system operator and kept near the operating console as a ready reference. A brief description of the system, the hardware and the digital processor used to control the hardware are provided. Emphasis has been placed on the two procedures that may be followed in turning the system on and checking to see that everything is operating properly. The first relies upon the system exerciser panel and is essentially a manual procedure. The second utilizes the digital processor in an automated mode. The manual procedure can be accomplished while the digital processor is being programmed for specific tests. (Author)

AD-919 267/5 PC **A05**/MF **A01**
Space and Missile Systems Organization, Los Angeles, CA.
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
Oct 73, 78p Rept nos. SAMSO/XRS-71-1-Vol-4, SAMSO-TR-72-122-Vol-4
See also Volume 5, AD-907 626L.
Distribution limitation now removed.

Command and control software will become more important in 1985 than it is today. It is crucial to determine whether future software technology, as projected from current trends, will be able to provide the techniques necessary to build the appropriate software of the future. This volume provides a brief introduction to software technology and defines the kinds of software that will be required to build and operate 1985 C/C systems. Having established requirements, the report then focuses on relevant software technology to forecast what it may be able to achieve by 1985. Both application and executive software are considered, with special emphasis on response time, adaptability to unforeseen situations, suitability, and ease of transfer from one machine to another. Of particular importance in C/C systems are methods for the design, production, and validation of software, and the management techniques necessary to administer large software-development projects. Current tools and practices are assessed. Finally, the estimates of 1985 software technology capabilities are compared with projected 1985 requirements for C/C software. The concluding section of the report outlines studies, projects, and R/D investments that the Air Force might undertake to narrow the expected gap between requirements and technology and to alleviate future problems in implementing and operating command and control software. (Author)

AD-922 519/4 PC **A04**/MF **A01**
McDonnell Douglas Astronautics Co.-East, St. Louis, MO.
Advanced Modulator II.
Final rept. 15 Mar-15 Nov 73,
J. R. Teague, and L. B. Allen. 16 May 74, 54p
AFAL-TR-74-17
Contract F33615-73-C-1144
Distribution limitation now removed.

The objective of this program was to conduct exploratory development of a 1 Gbps single-pass single-unit (unmultiplexed) modulator for use with a mode-locked and frequency-doubled neodymium YAG laser in a space laser communication system. The exploratory effort was directed toward the investigation and solution of problems for Pulse Gated Binary Modulation (PGBM) modulator operation. The modulator was to operate at data rates up to 1 Gbps and be able to handle 0.53 micrometer laser power up to 0.25 watts while maintaining its specified operating characteristics. The performance goals were (1) a static extinction ratio of 100 to 1 or greater, (2) a worst case dynamic extinction ratio of 30 to 1 or greater with a 1 Gbps pseudorandom code input, and (3) a static optical transmission of at least 80%. This effort was to develop the Gbps 0.53 micrometer modulator and provide a driver in breadboard form to be used as a laboratory tool to demonstrate the feasibility of the 1 Gbps modulator design concept. Several breadboard modulator-driver combinations were fabricated and evaluated. No hardware delivery was required. The four modulator units developed and evaluated under this program used the baseband and digital Pulse Gated Binary Modulation (PGBM) format.

ED-183 206 Not available NTIS
Virginia State Telecommunications Study Commission, Richmond.
Higher Education Uses of Telemedia in Virginia. Telecommunications Study Commission.
Working paper no. 9,
Frederick C. Schneider. 23 Aug 79, 8p
For related documents, see IR 008 153, IR 008 155, IR 008 158, and IR 008 161.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

This review of the problems encountered in the use of telecommunications for higher education in the Commonwealth of Virginia points out that there is no agency or organization that has taken the lead in coordinating and facilitating the organized growth and development of television services with and among all institutions. Insufficient in-place support systems and a lack of institutional as well as statewide planning are seen to be reasons for extensive duplication of capabilities and accumula-

tion of incompatible equipment throughout the state. Examples of systems developed at individual institutions are cited to demonstrate both their potential and problems in the implementation of such systems on a statewide basis.

ED-183 208 Not available NTIS
Virginia State Telecommunications Study Commission, Richmond.
Telemedia Research and Innovation. Telecommunications Study Commission.
Working paper no. 11,
Judith Uhlmann. 23 Aug 79, 11p
For related documents, see IR 008 152-160, IR 008 162, and IR 008 164-165.
Available from ERIC Document Reproduction Service (Computer Microfilm International Corporation), Arlington, VA 22210.

The extent of present efforts in telecommunications research and innovation in the Commonwealth of Virginia is reviewed. Two programs are highlighted: Project Hear (Higher Education Applications of Radio), designed to enable state-supported institutions to develop means of meeting cultural, instructional, and informational obligations through the use of radio broadcasting; and the Center for Excellence, Inc., a private, non-profit corporation concerned with educational, medical, and social services research and resource development. National perspectives on telecommunications research as they relate to Virginia are also reviewed, and the concluding comments indicate some areas in which there is a need for more government support, as well as levels of research and development that are not being utilized to their potential.

PB81-855355 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Mobile Telephone and Paging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jun 70-Jun 80,
William V. Sassi. Aug 80, 89p NERACEI NT0435
Sponsored by National Technical Information Service, Springfield, VA.

Research studies and articles cited in this bibliography describe the design, development, and application of mobile telephone and dispatch systems to industrial and private communication needs. Also included is a discussion of integrated mobile telephone and paging systems. (Contains 096 citations.)

17C. Direction Finding

AD-A092 136/1 PC **A08**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Radio Direction Finding on High Frequency Short Duration Signals.
Master's thesis,
Dennis Dean Sheppard. Jun 80, 175p

The feasibility of accomplishing high frequency direction finding against short duration (100-1000 ms) HF skywave signals using narrow aperture antennas is investigated. Two statistical procedures for estimating the signal bearing are proposed and compared. These procedures employ time averaging to reduce the large instantaneous bearing error caused by the phase and amplitude distortion of the wavefront due to scattering and multipath interference. Results are presented using data collected with the Southwest Research Institute Coaxial Spaced Loop HFDF system. It is shown that for a limited sample of data from this system the standard deviation of the bearing estimate for a 200 ms signal varied from 15 to 59 degrees. (Author)

AD-A092 311/0 PC **A03**/MF **A01**
Communications Research Centre, Ottawa (Ontario).
An Investigation of HF Direction-Finding Accuracy on the Churchill-Ottawa Auroral Zone Path.
Technical note,
G. O. Venier. Jul 80, 26p Rept no. CRC-TN-702

The CRC HF Direction-Finding Array, consisting of a 1181 meter by 236 meter cross, was used to make angle-of-arrival measurements on HF waves propagated over a 1900 km path from Churchill, Manitoba to Ottawa, in May, 1976. This path is of interest because much of it is in the auroral zone where conditions are generally more disturbed than at lower latitudes. Swept-frequency transmissions allowed the investigation of the variations in angle of arrival of individual propagation modes, while fixed-frequency transmissions permitted a test of two azimuth-estimation schemes. One of these used a phase-front planarity test and averaging of azimuths over relatively frequent samples, while the other was based on the separation of modes by Doppler processing. The former technique was found to provide slightly better accuracy than the latter on this path, and both compared well in accuracy with estimates from separated modes using swept-frequency data. (Author)

AD-A092 312/8 PC **A03**/MF **A01**
Communications Research Centre, Ottawa (Ontario).
An Investigation of HF Direction-Finding Accuracy on the Frobisher Bay-Ottawa Auroral Zone Path.
Technical note,
G. O. Venier. Jul 80, 40p Rept no. CRC-TN-703

The CRC HF direction-finding array, consisting of a 1181 meter by 236 meter cross, was used to make angle of arrival measurements of waves transmitted over a 2100 km path whose mid point was near the centre of the auroral zone. Swept-frequency transmissions allowed the investigation of the angle variations of individual propagation modes, and fixed-frequency transmissions permitted the measurement of Doppler shifts as well as the sampling of the phase fronts at relatively high rates. E-mode propagation over this path appeared to be entirely of the sporadic variety, but still provided good azimuth accuracy with a median RMS error from the great circle direction around 0.4 degrees for the single-hop case. On the F mode, spreading in range occurred a significant percentage of the time in contrast to experience with lower-latitude paths. This spreading was accompanied by large departures in angle of arrival for this mode from the great circle direction. Two azimuth-estimation techniques were tested on the fixed-frequency data. One used a phase-front planarity test and averaging over relatively frequent samples while the other was based on the separation of modes by Doppler processing. The former technique was found to provide slightly better results than the latter on these data, and its accuracy was, in most cases, close to that which could be obtained from the best mode when separated using swept frequency data. (Author)

PATENT-4 223 311 Not available NTIS
Department of the Navy, Washington, DC.
Long Range Listening System.
Patent,
Herman E. Ellingson. Filed 29 Feb 56, patented 16 Sep 80, 7p AD-D007 868/3, PAT-APPL-568 681
Supersedes PAT-APPL-568 681-56.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

The present invention relates to a system for locating and determining the range to a source of vibration. More particularly, this invention relates to a method and apparatus using correlation techniques in determining the direction and range of a source of sound. Previous devices for determining the direction and distance to a source sound or for locating objects have been of several types. In general, such previous devices have been characterized by the use of triangulation techniques for determining the direction and range to objects or to sources of sound. Also most of the prior art devices are amplitude sensitive and are therefore unable to distinguish the desired signal from local and ambient noise. Many of the prior art devices of this type also have disadvantages resulting from the distortions introduced into transmission of the vibration from the desired source by thermal and other discontinuities in the transmitting medium. The present invention avoids these difficulties by utilizing the correlation of the polarities of the vibrations received from at least two receiving elements.

17D. Electromagnetic and Acoustic Countermeasures

AD-A091 985/2 PC **A17**/MF **A01**
CNR, Inc., Needham, MA.
Integrated Coding and Waveform Design Study.
Final technical rept. Oct 78-Oct 79,
David Chase. Aug 80, 399p RADC-TR-80-282
Contract F30602-78-C-0309

It is shown that error-correcting codes capable of correcting random/burst errors play a critical role in the design of reliable multiple-access and adaptive-array ECCM systems. A comprehensive investigation of effective block and convolutional coding techniques, as well as combinations of the above, is conducted for worst-case interference models which are applicable to a wide variety of digital communications systems. It is shown that essentially error-free communications are possible, even when significant portions of the received data are completely destroyed by interference, providing a proper code rate and decoding technique are selected. The results in this report may be used to select error-correcting codes to improve the performance of existing systems as well as to optimize the integration of the coding and waveform design in new digital communications network. (Author)

AD-912 392/8 PC **A05**/MF **A01**
Systems Research Labs., Inc., Dayton, OH.
Voice Countermeasures Effectiveness Analysis.
Final rept. Feb 71-May 73,
Kenneth P. Congdon, and Kenneth Woodruff. Jul 73, 87p AFAL-TR-73-230
Contract F33615-71-C-1326
Distribution limitation now removed.

This report discusses the problems of voice intelligibility measurements as they relate to evaluating voice countermeasures effectiveness, and reviews existing equipment and methods for measuring intelligibility of voice communication systems. This report also describes a concept for measuring the effectivity of voice countermeasures equipment. The concept utilizes a 'calibrated' human evaluator and automatic scoring equipment. Methods are proposed for establishing and standardizing procedures for evaluating the effectivity of voice countermeasures equipment. (Author)

PAT-APPL-6-181 940 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Multi-Tone Jammer.
Patent Application,
Loren A. Seidl. Filed 24 Aug 80, 11p AD-D007 855/0
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This application discloses a waveform capable of jamming some or all of the channels of a multiple channel receiver is developed by a multi-tone jammer that uses a digital counter and a digital/analog converter to generate a ramp voltage for a voltage controlled oscillator (VCO). The output of the VCO is modulated by a pin diode attenuator. The attenuator is control ed by a pattern generator synchronized with the digital counter to blank the retrace and any portion of the sweep to provide a partial band tone jamming spectrum. The digital counter is driven by a MHz reference signal generator and the sweep repetition rate is greater than the circuit bandwidth.

17E. Infrared and Ultraviolet Detection

AD-A091 927/4 PC **A05**/MF **A01**
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
Design Considerations for the Infrared Airborne Radar (IRAR) MTI Subsystem.
Project rept.,
Robert C. Harney. 21 Jul 80, 92p TST-26, ESD-TR-80-83
Contract F19628-80-C-0002

A design for a moving target indication (MTI) subsystem for the infrared airborne radar (IRAR) is investigated. A Doppler MTI system incorporating heterodyne detection and a cw CO2 laser is determined to be the most suitable approach. Numerous analyses of topics including field-of-view coverage, Doppler resolution, signal-to-noise ratio, clutter effects, etc. are presented which serve to define component specifications and processing requirements. The potential architecture of the MTI system is discussed and the impact of developing technologies on system and component design is estimated. (Author)

AD-A092 068/6 PC **A05**/MF **A01**
Arinc Research Corp., Annapolis, MD.
Infrared Measurement Variability Analysis.
Final rept. Oct 78-Oct 79,
N. K. Matthis, T. J. Morin, and W. E. Thompson. Sep 80, 77p JTCG/AS-79-C-003
Contract N00173-78-C-0203

Two different Michelson interferometer measurement systems were used to collect spectral radiant intensity data describing blackbody emissions. These data were subjected to statistical and numerical analysis for the purpose of characterizing infrared measurement variability. A mathematical model has been postulated to describe the variability of infrared measurements based on the results of this analysis. Recommendations are made for future study to verify and extend the results presented in this report. (Author)

AD-A092 140/3 PC **A03**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Measurement of Performance Parameters for a FLIR Thermal Imaging System.
Master's thesis,
William Lester Sellers. Jun 80, 45p

The performance parameters of Noise Equivalent Temperature Difference (NETD), Minimum Resolvable Temperature Difference (MRTD), and Minimum Detectable Temperature Difference (MDTD) for the Naval Postgraduate School FLIR thermal imaging system were measured. The effects on these parameters of varying the detector aperture size (pinhole) were studied. It was determined that the thermal sensitivity of the system was directly proportional to the pinhole radius and resolution of the system was inversely proportional to the pinhole radius. Minimum values obtained were: NETD = 3.08 C, MRTD = 18 C, MDTD = 16 C. (Author)

AD-A092 371/4 PC **A04**/MF **A01**
Northeastern Univ., Boston, MA.
Signal Processing Circuit Development.
Final technical rept. 22 Dec 76-21 Dec 79,
B. L. Cochrun. Sep 80, 71p RADC-TR-80-260
Contract F19628-77-C-0087

This report covers the modification of an Air Force owned IR-CCD Scanning System for one-dimensional scans. The modifications provide electronic instrumentation for: two-dimensional scanning, X-Y sweep circuitry for oscilloscope and TV compatible circuitry for video display and correlated double sampling circuitry for reduction of noise and analog signal conditioning. (Author)

AD-B028 668/2 PC **A04**/MF **A01**
Naval Weapons Center, China Lake, CA.
Application of Statistical Fracture Criteria to the Problem of Predicting Infrared Dome Thermal Shock Failures.
Study of fracture theories FY 1975-FY 1977,
W. R. Compton. Jan 78, 68p NWC-TP-6010, GIDEP-E111-1461
Distribution limitation now removed.

Two statistical fracture theories are applied to the problem of infrared dome fracture in an aerodynamic heating environment. Theoretical fracture predictions are compared with fracture data obtained from full-scale infrared domes in aerodynamic heating and radiant heating tests. A sample application of a fracture theory in the definition of missile launch envelope restrictions is presented for magnesium fluoride domes. (Author)

AD-B030 997/1 PC **A05**/MF **A01**
General Electric Co., Syracuse, NY. Heavy Military Equipment Dept.
Signal Processor for IR Sensors.
Final rept. 15 Sep 77-31 Aug 78,
Ramon Nitzberg. Oct 78, 78p
Contract N00014-77-C-0673
Distribution limitation now removed.

The contract goals are to recommend improved signal processing techniques for passive infrared (IR) surveillance. Two specific areas have been considered. One is constant false-alarm rate (CFAR) processing to prevent excessive number of false alarms due to returns from clouds, glint, and other interference. Second is the specification of filter characteristics to improve rejection of undesired return from clouds, etc. and thereby increase the probability of detection of targets in clouds and other forms of natural interference. (Author)

AD-903 700/3 PC **A04**/MF **A01**
General Electric Co., Utica, NY. Aerospace Electronic Systems Dept.
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
Final technical rept. 12 Nov 71-8 Jan 72,
Dennis S. Cleverly. May 72, 72p RADC-TR-72-97-Vol-1
Contract F30602-72-C-0002
See also Volume 2, AD-903 701L.
Distribution limitation now removed.

This report covers the field testing of a 1-1/2 in. FPS vidicon and Gallium Arsenide laser, used as an air base perimeter surveillance device. Testing included probability of recognition of personnel when the system was pointed by an AN/PPS-12 Radar, and recognition of passive cooperative targets. Aircraft were observed as targets of opportunity. As a result of the field tests, requirements for a field deployable system were found. These requirements came from the system parameters found to be most effective. They include a narrower field-of-view on both the illuminator and camera (6 degrees was used during testing), more illuminator power (18 watts was used) and ground level deployment.

AD-903 701/1 PC **A04**/MF **A01**
General Electric Co., Utica, NY. Aerospace Electronic Systems Dept.
'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
Final technical rept.,
Gerald A. Boothroyd. May 72, 54p RADC-TR-72-97-Vol-2
Contract F30602-72-C-0002
See also Volume 1, AD-903 700L and Volume 1 Addendum, AD-522 354L.
Distribution limitation now removed.

This volume documents the equipment, installation and testing of Activision in the Nite Gazelle/Nite LARS weapon delivery system. The Activision equipment includes a pulsed Gallium Arsenide illuminator, an intensified isocon television camera with range gating capability and range data display generators. Data gathered by General Electric during evaluation tests at Nellis AFB is presented. The modifications incorporated in a government furnished isocon camera utilized in the program are described. (Author)

AD-918 930/9 PC **A04**/MF **A01**
Rockwell International, Thousand Oaks, CA. Science Center.
1.06 Micrometer High Sensitivity IR Photocathode.
Final rept. 6 Mar 72-31 Dec 73,
J. S. Harris, Jr., and R. Sahai. Apr 74, 64p SC528.33FR, AFAL-TR-74-68
Contract F33615-72-C-1921
Distribution limitation now removed.

The design and progress towards development of a field-assisted double heterojunction photocathode with high quantum efficiency at 1.06 micrometers is reported. This project covers three main areas: (1) The growth by liquid phase epitaxy and characterization of GaAsSb and GaAlAsSb alloys of suitable composition for fabricating a heterojunction photocathode. (2) Experimental and theoretical studies on the electron and hole transport and optical properties of heterojunctions between various III-V alloys grown by liquid phase epitaxy. (3) The design, fabrication and testing of a double heterojunction p-n-p photocathode structure with a p-n junction collector. Experimental studies on the electrical transport and optical properties of the heterojunctions required for the photocathode show that the anticipated problems with potential barriers in the conduction band do not exist. These results have significant implications for many other heterojunction devices. Internal photoemission in the complete photocathode test structure has been observed establishing the feasibility of the double heterojunction approach.

17F. Magnetic Detection

AD-A092 151/0 PC **A04**/MF **A01**
Naval Research Lab., Washington, DC.
Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
Final rept.,
R. J. Dinger, and J. A. Goldstein. 15 Oct 80, 60p
Rept no. NRL-8430

Measurements of the ambient magnetic field in the frequency range from 0.3 Hz to 40 Hz were made at a mid-latitude location in winter (China Lake, California) and an auroral location in summer (Tromso, Norway). At each location two sensitive triaxial SQUID magnetometers were installed at sites whose separation was varied from 0.5 km to 15 km (in California) and from 0.5 km to 9.3 km (in Norway). Approximately two weeks of nearly continuous data were recorded at each location. Schumann resonances with a particularly high ratio of signal-to-instrument noise were observed, with six orders of the resonances typically visible. Peaks attributed to wind-induced motion noise were observed in the spectra, particularly at the exposed China Lake sites. Prominent spikes were present in the spectra above about 10 Hz; except for several of these spikes that were traced to the tape recorder playback electronics, they are believed to represent genuine man-made ambient signals. Probable sources of the interference include 4-pole synchronous motor emissions, powerline subharmonics, and electrified railway or telephone ringing signal emissions. In California the coherence between the nominally parallel sensors at the two sites was relatively high (greater than 0.75) at all separations and showed definite peaks at the frequencies of the Schumann resonances. The coherence was highest at frequencies from about 5 Hz to 20 Hz, usually 0.9 or more. No structure in the coherence attributable to the effects of geological inhomogeneities was seen in the California data. The coherence between orthogonal sensors in both California and Norway was usually 0.25 or less and was highly variable.

AD-A092 399/5 PC **A06**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Low Frequency Geomagnetic Fluctuations (.04 to 25 Hz) on Land and on the Floor of Monterey Bay.
Master's thesis,
Gerald R. McDevitt, and B. Bert Homan. Jun 80, 112p

A coil antenna consisting of approximately 6000 turns of copper wire was used to measure the horizontal component of fluctuations of the earth's magnetic field on the floor of Monterey Bay in water depth of approximately 50 meters. The results indicate that the power spectral density of the fluctuations varies from 10(nT)-sq/Hz at 0.04 Hz to 0.000001(nT)-sq/Hz at 25 Hz, a monotonic de-

crease of about 6 dB/octave, except in the 8-20 Hz region where the Schuman resonances occur. While the sensitivity of the equipment was insufficient to measure the vertical component of the fluctuation we can put an upper limit of 0.001(nT)-sq/Hz at 1 Hz and 0.000001(nT)-sq/Hz) at 10 Hz on the magnitude of this component. The same sensor was also used to measure various components of the field fluctuations at a remote land site (Chew's Ridge). In the frequency range observed the general shape of the spectra was similar to those obtained at sea. However, a strong azimuthal variation at certain frequencies was noted in the land data. The possibility that these directional signals are of man made origin cannot be excluded at this time. (Author)

17G. Navigation and Guidance

AD-A091 885/4 PC **A05**/MF **A01**
Army Missile Command, Redstone Arsenal, AL. Guidance and Control Directorate.
Field Evaluation of the LR80 Land Navigation System.
Technical rept.,
L. J. Little. Apr 80, 81p DRSMI/RG-80-22, AD-E950 035

This report contains the results of a field evaluation of the Litton Industries LR80 Land Navigation System conducted by the Guidance and Control Directorate at Redstone Arsenal, Al. The overall performance of the system established a north alignment with .021 deg, a position accuracy of .33 percent of the distance traveled and the elevation variation was so great that an accuracy value was not considered. (Author)

AD-A091 977/9 PC **A04**/MF **A01**
Federal Aviation Administration Technical Center, Atlantic City, NJ.
Distance Measuring Equipment Traffic-Loading Capacity Investigation.
Interim rept.,
Harold Postel. Oct 80, 73p FAA-CT-80-41, FAA-RD-80-100
See also Rept. no. FAA-RD-71-109, AD-737 038.

This phase of the project was performed in response to a letter from Acting Chief, Navigation and Landing Division, ARD-300, dated January 17, 1980, under Project 81, tactical air navigational aid (TACAN)/distance measuring equipment (DME) Systems Support 042-306 TACAN/DME Maintenance/Sustaining Engineering. The project was performed to determine the cause of loss of DME service at the O'Hare International Airport, Chicago, Illinois, and the Stapleton International Airport very high frequency omnidirectional radio range tactical air navigational system (VORTAC), Denver, Colorado. This report covers the findings of the traffic counts of the O'Hare DME and Stapleton VORTAC. The results show that these systems were being interrogated at rates in excess of the systems' capacities. (Author)

AD-A092 109/8 PC **A02**/MF **A01**
Air Force Packaging Evaluation Agency, Wright-Patterson AFB, OH.
Evaluation/Redesign of the F-105 Pitch Rate Gyro Pack,
James D. Heck. Oct 80, 10p Rept no. PTPT-80-16

The F-105 Pitch Rate Gyro Pack was subjected to rough handling tests in compliance with Federal Test Method Standard 101B. The objective of this testing was to determine the level of shock protection provided for the Pitch Rate Gyro and to redesign the container if the current pack does not provide a 15 G level of protection, the rated fragility value for the item. It was determined that the pack presently used does not provide the required level of protection, therefore the pack was redesigned to provide a 15 G level of protection. (Author).

AD-A092 450/6 PC **A03**/MF **A01**
Federal Aviation Administration Technical Center, Atlantic City, NJ.
Consolidated Car Display: A Summary Report of the Process and the Results of the Consolidation of Critical and Supplementary Terminal Area Air Traffic Control Information for Display Presentation.
Final rept. Jan 78-Jun 79,
Gerard Spanier. Sep 80, 49p FAA-CT-80-20, FAA-RD-80-73

This report describes the work performed within the Systems Simulation and Analysis Division, ACT-200, to produce an engineering requirement for a terminal area display system for field implementation by the Airway Facilities Service. The report details the basic project efforts to define a data display system to consolidate many of the Terminal Radar Approach Control Facility (TRACON) and tower cab controller's indicators, displays, alarms, controls, status lights, weather data presentations, etc., to reduce physical size, improve work station efficiency, and enhance the management and use of Air Traffic Control (ATC) oriented data. The report covers the data collection process; the requirements determination process; the technology assessment performed; the design development, and validation of certain hardware/software components; a risk assessment of the unique aspects of the system design; and the engineering requirement form.

AD-921 863/7 PC **A05**/MF **A01**
Analytic Sciences Corp., Reading, MA.
Reduced-Order Estimators and Their Application to Aircraft Navigation.
Technical rept. Jul 72-Sep 73,
Julian L. Center, Joseph A. D'Appolito, and Steven I. Marcus. Aug 74, 77p TASC-TR-316-4-2, AFAL-TR-73-367
Contract F33615-72-C-1787
Distribution limitation now removed.

Minimum-variance reduced-order estimators are derived and analyzed. Although the computations required to determine the optimum gains and dynamics for these optimal reduced-order filters and observer-estimators may be too complex to implement in real time, in many cases these parameters can be determined off-line and stored for real-time use. Furthermore, a study of optimal reduced-order estimators provides guidelines for designing simpler reduced-order filters and observer-estimators. Also, the error covariance matrices of the optimal reduced-order estimators provide quantitative criteria for measuring the performance of heuristically designed reduced-order estimators. Two multisensor navigation example problems are formulated and used for comparing the performance of a heuristically designed reduced-order filter to that of the corresponding minimum-variance reduced-order estimators. (Author)

17H. Optical Detection

AD-A092 381/3 PC **A03**/MF **A01**
Naval Weapons Center, China Lake, CA.
Effect of Response Mode on Target Identification.
Target acquisition study 1980,
Steven F. Nathan. Jun 80, 28p NWC-TP-6202, AD-E900 000

An experiment was conducted to determine the effects of two response modes (immediate versus delayed response) on target identification performance. Ship images were displayed sequentially, in sets of five, on a television monitor simulating infrared imagery. A prebriefed 'target' ship appeared once in each set. 'Immediate' responders designated targets at the time of presentation; 'delayed' responders made a target designation after viewing each set. Observers' target identification performance was assessed as a function of image size (7, 10, and 13 TV lines) and image exposure time (2 and 4 seconds), as well as response mode. No difference in identification performance was found between response modes. Performance was significantly better for 10- and 13-line images than for 7-line images. Exposure time had no significant effect.

PAT-APPL-6-185 472 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Automatic Bandwidth Control System.
Patent Application,
Stanislaw A. Kakorowoski. Filed 9 Sep 80, 16p
AD-D007 861/8
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This application discloses an automatic bandwidth control system for an adaptive optics servo utilizing and adjustable amplitude low frequency sinusoidal dither signal to optimize the servo bandwidth for a particular target scenario thereby minimizing bandwidth-related degradation.

17I. Radar Detection

AD-A092 077/7 PC **A07**/MF **A01**
Kansas Univ./Center for Research, Inc., Lawrence. Remote Sensing Lab.
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
Final rept.,
W. H. Stiles, Fawwaz T. Ulaby, E. A. Wilson, and J. C. Holtzman. Jul 80, 147p CRINC/RSL-TR-393-2, ETL-0234
Contract DAAK70-78-C-0121

This report covers a measurement program to obtain circularly polarized radar backscatter coefficient data along with associated ground-truth information on snow-covered terrain. Snow-covered grass, asphalt and ice were observed at selected frequencies from 8 to 18 GHz for angles of incidence 0 deg (nadir) and 80 deg. Also included are some analyses of the effects of snowcover on the backscatter from terrain.

AD-A092 260/9 PC **A03**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An ADA Language Model of the AN/SPY-1A Component of the AEGIS Weapon System.
Technical rept.,
Earl E. McCoy. Aug 80, 44p Rept no. NPS52-80-011

AN ADA-like language is proposed as a high level, specification oriented modeling tool. It is asserted that the very early system design modeling tasks are typically not given adequate stress, with the result that poor system designs are carried forward into the mid design phases. A lack of suitable modeling tools is likely one reason, and so an ADA-like modeling technique is proposed. It has many of the properties of specification languages, including the ability to be machine processed to indicate incomplete or inconsistent systems. The unclassified portions of the SPY-1 radar component of the AEGIS weapon system is used as a test vehicle to illustrate the modeling technique. (Author)

AD-A092 276/5 PC **A03**/MF **A01**
National Oceanic and Atmospheric Administration, Boulder, CO. Environmental Research Labs.
Evaluation of a Meteorological Airborne Pulse Doppler Radar.
Final rept. Oct 77-Jul 80 on Phase 1,
B. L. Trotter, R. G. Strauch, and C. L. Frush. Jul 80, 44p FAA-RD-80-98
Contract DOT-FA78WAI-877

An X-Band airborne radar has been modified to provide a Doppler radar capability. The Doppler radar has been tested to prove the system concept usable. Tests were conducted at Norman, Oklahoma, from May 30 to June 9 of 1978 and in Miami, Florida, on December 1 through December 5, 1979. Optimally the tests would have used meteorological targets for measurement of radial velocities, however, most tests had to be conducted with chaff and ground returns. The tests did show that the airborne Doppler radar will measure velocities that are comparable to those measured by a ground based Doppler radar and those that can be computed by a high accuracy inertial navigation system. The error in the measured radial velocities, when compared to other sensors, is much less than the estimated RMS error of 2 meters/second. (Author)

AD-A092 318/5 PC **A06**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
Master's thesis,
Thomas Foster Beaver. May 80, 124p Rept no. AFIT-CI-80-11T

An investigation was conducted to determine the feasibility of objectively analyzing digital Doppler radial velocity data at constant altitudes. Data were supplied by the National Severe Storms Laboratory at Norman, Oklahoma. The study area was a 96 km by 116 km box surrounding the Chickasha, Oklahoma, synoptic network. A computer program, initially developed by Greene in 1971 and subsequently modified, was used as the basis for this computer program development. This research demonstrated that mesocyclones could be located using constant altitude radial velocity maps (CAVM) on a 2-km horizontal and a 1-km vertical grid scale without correcting for storm motion. However a 1-km horizontal and vertical grid scale was found to be 'optimum' for location and study of mesocyclones. Constant altitude velocity maps (CAVM) were then compared with constant altitude reflectivity maps (CAZM). This comparison, using two different storms, demonstrated that CAVM analysis was superior to CAZM analysis for the detection of severe storm areas.

AD-A092 505/7 PC **A02**/MF **A01**
Rome Air Development Center, Hanscom AFB, MA. Deputy for Electronic Technology.
Frequency Dependence of Slant Path Rain Attenuations at 15 and 35 GHZ,
E. E. Altshuler, and L. E. Telford. 31 Dec 79, 17p Rept no. RADC/ETR-80-0032
Pub. in Radio Science, v15 n4 p781-796 Jul-Aug 80.

No abstract available.

AD-A950 100/8 MF **A01**
Cornell Aeronautical Lab., Inc., Buffalo, NY.
Error Analysis of Ruby Radar Cross Section Measurement System.
Rept. for 1 Apr-31 May 58,
R. J. Wohlers. 31 May 58, 31p Rept no. CAL-UB-1088-P-103
Contract DA-30-115-ORD-739
Availability: Microfiche copies only.

No abstract available.

AD-B012 103/8 PC **A06**/MF **A01**
Ballistic Research Labs., Aberdeen Proving Ground, MD.
Millimeter Wave Radar Applications to Weapons Systems.
Final rept.,
Victor W. Richard. Jun 76, 118p Rept no. BRL-MR-2631
Supersedes rept. no. BRL-IMR-61.
Distribution limitation now removed.

Applications of millimeter wave radars in ground-to-air, ground-to-ground, and air-to-ground weapons systems are presented. The advantages and limitations of operating at millimeter wavelengths are defined. The characteristics of millimeter wave propagation in adverse weather are described with emphasis on rain backscatter and attenuation theory, experimental data, and rain effects on radar system performance. The theory of fluctuating clutter is discussed and a terrain clutter model is presented whose output is characterized by its power spectral density and probability density function. Several clutter discrimination techniques are described. The status of millimeter wave radars and components is reviewed and technology advances required are pointed out. (Author)

AD-B041 709/7 PC **A03**/MF **A01**
M and S Computing, Inc., Huntsville, AL.
Target Recognition System Design: Computational Structures with Response Time Characteristics Dictated by the Operational Environment.
Technical rept.,
Belur V. Dasarathy. 18 Jul 79, 46p 78-019, DRSMI-T-CR-79-23
Contract DAAK40-79-D-0018
Distribution limitation now removed.

Alternative state-of-the-art computational structures for implementing nonparametric classifiers are developed and analyzed from the viewpoint of their abilities to meet the response time requirements imposed by the application, viz, tactical target recognition in combat environments. Minimum response time, as well as worst case (min max) design requirements, are addressed. Both theoretical and experimental results are presented to bring out the relative merits of the different alternatives considered by the study. (Author)

AD-482 913/1 PC **A10**/MF **A01**
Radiation Inc Melbourne Fla
Lightweight Radar Alarm System. Volume 2 (Appendices).
Final rept.,
Edward G. Meyer , and Carl L. Moher. Mar 66, 210p A-04773-Vol-2, RADC-TR-65-58-Vol-2
Contract AF 30(602)-3554
See also Volume 1, Part 1, AD-482 920 and Volume 1, Part 2, AD-372 593.
Distribution limitation now removed.

A simple, transportable, automatic aircraft surveillance radar for use in the limited warfare environment is described. System operational requirements are established, basic system defined, and design trade-off analyses performed to arrive at the optimum system configuration. Areas of investigation include typical target bistatic cross section, doppler and doppler rate, direct signal and low altitude target propagation effects, spectral purity requirements, performance monitoring, environmental conditions, signal processor optimization, detection probability communications reliability, and component reliability. Preliminary designs are evolved for the antenna, power amplifier, frequency generator, low noise front end, doppler processor, power amplifier, and antenna mast subsystems. Integrated circuits and active filtering are used throughout to minimize equipment size and weight. Breadboards of the power amplifier and doppler processor were built to establishing solid state feasibility. The system employs multiple site, bistatic, CW operation to provide electronic fence-like coverage. Basic site units are designed for ease of emplacement, high probability of target detection, and long periods of unattended operation.

AD-482 920/6 PC **A07**/MF **A01**
Radiation Inc Melbourne Fla
Lightweight Radar Alarm System. Volume 1. Part 1.
Final rept.,
Edward G. Meyer , and Carl L. Moher. Mar 66, 132p A-04773-Vol-1-Pt-1, RADC-TR-65-58-Vol-1-Pt-1
Contract AF 30(602)-3554
See also Volume 1, Part 2, AD-372 593.
Distribution limitation now removed.

A simple, transportable, automatic aircraft surveillance radar for use in the limited warfare environment is described. System operational requirements are established, basic system defined, and detailed design trade-off analyses performed to arrive at the optimum system configuration. Areas of investigation include typical target bistatic cross section, doppler and doppler rate, direct signal and low altitude target propagation effects, spectral purity requirements, performance monitoring, environmental conditions, signal processor optimization, detection probability, communications reliability, and component reliability. Preliminary designs are evolved for the antenna, power amplifier, frequency generator, low noise front end, doppler processor, power amplifier, and antenna mast subsystems. Integrated circuits and active filtering are used throughout to minimize equipment size and weight. Breadboards of the power amplifier and doppler processor were built to establishing solid state feasibility. The system employs multiple site, bistatic, CW operation to provide electronic fence-like coverage. Basic site units are designed for ease of emplacement, high probability of target detection, and long periods of unattended operation.

AD-503 039/0 PC **A04**/MF **A01**
Devenco Inc New York Research and Development Div
Perimeter Protection System.
Final technical rept. 10 May 68-25 Mar 69, Irwin Goldstein, and Michael Barr. Jun 69, 56p
RADC-TR-69-168
Contract F30602-68-C-0257
Distribution limitation now removed.

The objective of this effort was to fabricate developmental models of a perimeter radar intrusion detection system for field test and evaluation. The technical report reviews the background of the Perimeter Protection System including a theoretical analysis. Performance and Modifications performed under this contract are described. Test procedures for the component and subassemblies are outlined. (Author)

AD-885 234/5 PC **A02**/MF **A01**
Devenco Inc New York Research and Development Div
Modifications to Devenco Model PPS-3A Radar Fence.
Final technical rept. 28 Apr 70-22 Mar 71,
Irwin Goldstein. Jun 71, 19p 3664-F, RADC-TR-71-118
Contract F30602-70-C-0293
Supplement to Rept. no. RADC-TR-69-168, AD-503 039L.
Distribution limitation now removed.

The objective of this effort was to modify six GFE developmental Radar Fence Sets which were originally fabricated and delivered under a previous RADC contract. The modifications were designed to improve the basic equipment, mechanical, electrical, and operational characteristics to enable more effective and extensive field operational testing under more extreme environmental conditions. (Author)

AD-885 551/2 PC **A10**/MF **A01**
Westinghouse Electric Corp Baltimore MD Electronic Systems Support Div
Data Link, Helicopter Supported Radar.
Final technical rept.,
Vern H. Walker, Richard G. Schneider, Frank W. Kelso, Raymond O. Neikirk, and Robert P. Fannenstell. Jun 71, 221p RADC-TR-71-119
Contract F30602-69-C-0206
Distribution limitation now removed.

The contract demonstrated the technical feasibility of using a microwave data link to remote radar data from a helicopter supported radar to ground terminal at a slant range of ten nautical miles. Ground and airborne tests demonstrated the data link subsystem and system performance for operation in a helicopter (UH-IF) environment at an aaltitude of 5,000 feet. Flight tests proved performance of the data link made the system operable. (Author)

PAT-APPL-6-185 469 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
A Netted Search Radar System.
Patent Application,
J. R. Schindler. Filed 9 Sep 80, 15p AD-D007 859/2
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

A netted, search radar system to defeat monopulse anti-radiation missiles utilizing a plurality of search radars scanning asynchronously with differently coded signals. The coded pulse trains from each radar precisely timed and frequency locked to one another in order that all radar units simultaneously emit pulses on or at substantially the same r.f. carrier frequency. (Author)

PATENT-4 228 435 Not available NTIS
Department of the Air Force, Washington, DC.
Radar Sensitivity Time Control Using Range Gated Feedback.
Patent,
Robert L. Nevin. Filed 23 Jan 79, patented 14 Oct 80, 11p AD-D007 877/4, PAT-APPL-6-005 885
Supersedes PAT-APPL-6-005 885, AD-D005 867.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

A sensitivity time control circuit for radar receivers, using range gated feedback where the video signal

is sampled and compared to a desired signal at intervals based upon range sweep; as the radar antenna is reversing direction, integrated averages of the video signal are used to update the sensitivity time controlled waveform. (Author)

18.

NUCLEAR SCIENCE AND TECHNOLOGY

18A. Fusion Devices (Thermonuclear)

AD-A092 470/4 PC **A04**/MF **A01**
Naval Research Lab., Washington, DC.
NRL Inertial Confinement Fusion Theory Program 1979 Annual Report, October 1978 - December 1979.
Memorandum rept.,
20 Nov 80, 75p Rept no. NRL-MR-4369

Research in each of the four current program areas is reported: Section A. Laser Light Absorption. Section B. Fluid Dynamics of Ablative Acceleration. Section C. Development of Computational Techniques. Section D. Rayleigh-Taylor Stabilization Techniques. Our work in Section A includes an analysis of anomalous absorption, backscatter and flux limitation in laser-produced plasmas. The physical processes included in the model are inverse bremsstrahlung, resonant absorption, absorption by ion-acoustic fluctuations, and Brillouin backscatter. In Section B we report our work on the energy conversion of light ion beams through the ablative acceleration of thin foils, our work on spherical shock implosion dynamics and stability, and our 1D and 2D work on the dynamics of laser-driven thin plastic foils. In Section C we report our current developments in triangular grid techniques. These results include improved calculations of the Rayleigh-Taylor instability through higher resolution in the SPLISH numerical model. In Section D, we report our improved understanding of the 'quasi-static' equilibria. We also report on our development of a vorticity generation model to study the Rayleigh-Taylor instability and include our results for test problem and actual laser-driven ablation layer profiles. We also include our work on the Rayleigh-Taylor eigenvalue problem.

AD-A092 471/2 PC **A03**/MF **A01**
Naval Research Lab., Washington, DC.
NRL Light Ion Beam Research for Inertial Confinement Fusion.
Memorandum rept.,
G. Cooperstein, S. A. Goldstein, D. Mosher, R. J. Barker, and J. R. Boller. 20 Nov 80, 39p Rept no. NRL-MR-4387
Contract DOE-DE-A108-79DP40092

There is presently great interest in using light ions beams to drive thermonuclear pellets. Terrawatt-level ion beams have been efficiently produced using conventional pulsed power generators at Sandia Laboratory with magnetically-insulated ion diodes and at the Naval Research Laboratory with pinch-reflex ion diodes. Both laboratory have recently focused ion beams to pellet dimensions. This paper reviews recent advances made at NRL in the area of ion production with pinch-reflex diodes, and in the areas of beam focusing and transport. In addition, modulator generator and beam requirements for pellet ignition systems are reviewed and compared with the latest experimental results. These results include the following: (1) production of > or = 100 100 kJ proton and deuteron beams with peak ion powers approaching 2 TW on the PITHON generator in collaboration with Physics International Co., (2) focusing of 0.5 TW deuteron beams produced on the NRL Gamble II generator to current densities of about 300 kA/sq cm, and (3) efficient transport of 100 kA level ion beams over 1 meter distances using Z-discharge plasma channels. (Author)

AD-A092 472/0 PC **A02**/MF **A01**
Naval Research Lab., Washington, DC.
Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
Final rept.,
D. Mosher, D. G. Colombant, and Shyke A. Goldstein. 27 Nov 80, 20p Rept no. NRL-MR-4397

Pulsed-power and ion-beam production and handling techniques are available to assemble a break-even Inertial-confinement-fusion (ICF) experiment. In this report, simple scaling laws for beam focusing, transport, bunching and packing are combined to define an acceptable range of parameters for ignition-system modules delivering low-atomic-number (less than or approximately equal to 6) ion beams to a pellet. Techniques for increasing the deliverable beam intensity are then discussed. (Author)

BNL-28375 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Bend Strain Tolerances of a Nb sub 3 Sn Conductor Proposed for Use in the Magnetic Fusion Energy Program.
T. Luhman, D. O. Welch, and M. Suenaga. 1980, 5p CONF-800980-18
Contract AC02-76CH00016
Applied superconductivity conference, Santa Fe, NM, USA, 29 Sep 1980.

Bend strain tolerances were studied on a 2869 filament bronze-processed Nb sub 3 Sn wire conductor in magnetic fields to 8 T. Relative values of the wire's current transfer length to twist pitch were shown to influence the bend-strain tolerance. Low matrix resistivities, associated with Sn-depleted bronzes following heat-treatments of 48 h at 725 exp 0 C, produce current transfer lengths less than the twist pitch, 10 mm. The resulting bend-strain tolerances, at 10 exp -12 ohm.cm, are improved over those found for shorter heat-treatment times. Results from bend-fatigue experiments were divided into two domains separated by the strain value required to produce compound cracking, epsilon/sub f//sup B/. Applied bending strains less than epsilon/sub f//sup B/ were found to increase zero strain critical current values and this increase was independent of the number of fatigue cycles. When applying strains large enough to produce cracking in the compounds critical currents decreased from their asreacted values tending to reach a minimum after several fatigue cycles. Evidence exists for a neutral axis shift during bending and slight differences between tensile and bend strain tolerances are accounted for in terms of such a shift. (ERA citation 06:001181)

BNL-51188 PC **A07**/MF **A01**
Brookhaven National Lab., Upton, NY.
Proceedings of Brookhaven National Laboratory's Fusion/Synfuel Workshop.
J. A. Fillo, and J. R. Powell. 1979, 136p CONF-7908127-
Contract AC02-76CH00016
Brookhaven National Laboratory's fusion/synfuel workshop, Upton, NY, USA, 27 Aug 1979.

The fusion synfuels workshop held at Brookhaven National Laboratory (BNL) on August 27-29, 1979 examined the current status of candidate synfuel processes and the R and D required to develop the capability for fusion synfuel production. Participants divided into five working groups, covering the following areas: (1) economics and applications; (2) high-temperature electrolysis; (3) thermochemical processes (including hybrid thermo-electrochemical); (4) blanket and materials; and (5) high-efficiency power cycles. Each working group presented a summary of their conclusions and recommendations to all participants during the third day of the Workshop. These summaries are given. (ERA citation 05:037771)

CEA-CONF-4696 PC **A03**/MF **A01**
Association Euratom-CEA sur la Fusion, Centre d'Etudes Nucleaires de Fontenay-aux-Roses (France). Dept. de Physique du Plasma et de la Fusion Controlee.
Research on TFR.
1979, 46p CONF-790255-1
In French.Soviet conference on controlled thermonuclear fusion, Zvenigorcd, USSR, 21 Feb 1979. U.S. Sales Only.

In this paper, it is first proposed to review very briefly the main results of research on TFR. In the second part, the study of the temperature and density fluctuations linked to saw tooth relaxations is presented rather more completely. This study is taken as example for illustrating one of the peculiarities of research on TFR, namely that the study of a physical situation is carried out by using simultaneously numerous diagnoses and in close cooperation with the theoricians. The third section deals with the recent results achieved on TFR 600 with heating by waves at the cyclotronic frequency of ions. (Atomindex citation 11:519262)

CONF-800427-19(Dr) PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Implications of Tritium in Neutral Beam Injectors.
J. Kim, and L. D. Stewart. 1980, 14p
Contract W-7405-ENG-26
Tritium technology in fission, fusion, and isotopic applications, Dayton, OH, USA, 29 Apr 1980.

Neutral injectors for heating plasmas of D-T burning fusion reactors are subject to tritium contamination. This paper discusses relevant questions and problem areas pertinent to tritium environment, including calculations of tritium contaminations in different neutral injectors, gas handling and pumping systems, and implications on beam line components. (ERA citation 05:039158)

CONF-800770-1 PC **A12**/MF **A01**
Oak Ridge National Lab., TN.
ETF Interim Design Review.
D. Steiner, and P. H. Rutherford. 1980, 253p
Contract W-7405-ENG-26
ETF interim design review, Rockville, MD, USA, 23 Jul 1980.

A three-day ETF Interim Design Review was conducted on July 23-25, 1980, at the Sheraton Potomac Inn in Rockville, Maryland. The intent of the review was to provide a forum for an in-depth assessment and critique of all facets of the ETF design by members of the fusion community. The review began with an opening plenary session at which an overview of the ETF design was presented by D. Steiner, manager of the ETF Design Center, complemented by a physics overview by P.H. Rutherford, chairman of the ETF/INTOR Physics Committee. This was followed by six concurrent review sessions over the next day and a half. The review closed with a plenary session at which the Design Review Board presented its findings. This document consists of the viewgraphs for the opening plenary session and an edited version of the presentations made by Steiner and Rutherford. (ERA citation 06:001693)

CONF-801011-10 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Configurational Analysis of an EBT Reactor in Various Magnetic Geometries.
L. W. Owen, and N. A. Uckan. 1980, 13p
Contract W-7405-ENG-26
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

Optimization of vacuum field particle confinement in an ELMO Bumpy Torus (EBT) reactor has been considered. Several methods of improving the efficient utilization of magnetic fields and the particle confinement characteristics of a reactor have been analyzed. These include the use of (1) magnets with a large mirror ratio, (2) high field Nb sub 3 Sn or Nb sub 3 Sn/NbTi hybrid mirror coils, (3) split-wedge mirror coils, (4) aspect ratio enhancement (ARE) coils, and (5) recently developed field symmetrizing (SYM) coils. Of these, particle drift orbits and three-dimensional tensor pressure equilibrium calculations have shown that the ARE and SYM coils used in conjunction with high field magnets offer the most promise of good plasma performance in a smaller size (up to 50%) EBT reactor. The relative merits of each magnetic configu-

ration are discussed, and the design characteristics are given. (ERA citation 05:039147)

CONF-801011-14 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
B. L. McGill, R. W. Roussin, D. K. Trubey, and B. F. Maskewitz. 1980, 7p
Contract W-7405-ENG-26
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

The Radiation Shielding Information Center (RSIC), established in 1962 to collect, package, analyze, and disseminate information, computer codes, and data in the area of radiation transport related to fission, is now being utilized to support fusion neutronics technology. The major activities include: (1) answering technical inquiries on radiation transport problems, (2) collecting, packaging, testing, and disseminating computing technology and data libraries, and (3) reviewing literature and operating a computer-based information retrieval system containing material pertinent to radiation transport analysis. The computer codes emphasize methods for solving the Boltzmann equation such as the discrete ordinates and Monte Carlo techniques, both of which are widely used in fusion neutronics. The data packages include multigroup coupled neutron-gamma-ray cross sections and kerma coefficients, other nuclear data, and radiation transport benchmark problem results. (ERA citation 06:001740)

CONF-801011-15 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
ETF Design Activities: Status and Future Direction.
D. Steiner. 1980, 29p
Contract W-7405-ENG-26
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

The nature of the device to follow TFTR has been evolving over the past six years. The most recent design activities have been directed to the Engineering Test Facility (ETF) concept. In order to address the design of the ETF a centralized laboratory/industry design team was established and hosted at ORNL. This Design Center began ETF Preconceptual design in October, 1979. The ETF design effort has been judged to be sound. However, the ETF mission has been judged to be overly ambitious. It has been recommended that the device to follow TFTR be dedicated to the investigation of engineering feasibility and that device has been designated the Fusion Engineering Device (FED). The ETF design activities provide a basis for developing the FED design. This will be accomplished under the direction of the newly formed FED Technical Management Board. (ERA citation 06:001694)

CONF-801011-3 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
ORNL Fusion Reactor Shielding Integral Experiments.
R. T. Santoro, R. G. Alsmiller, Jr., J. M. Barnes, and G. T. Chapman. 1980, 6p
Contract W-7405-ENG-26
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

Integral experiments that measure the neutron and gamma-ray energy spectra resulting from the attenuation of approx. 14 MeV T(D,n) exp 4 He reaction neutrons in laminated slabs of stainless steel type 304, borated polyethylene, and a tungsten alloy (Hevimet) and from neutrons streaming through a 30-cm-diameter iron duct (L/D = 3) imbedded in a concrete shield have been performed. The facility, the NE-213 liquid scintillator detector system, and the experimental techniques used to obtain the measured data are described. The two-dimensional discrete ordinates radiation transport codes, calculational models, and nuclear data used in the analysis of the experiments are reviewed. (ERA citation 05:039182)

CONF-801011-5 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
ETF System Code: Composition and Applications.
R. L. Reid, and K. F. Wu. 1980, 6p
Contract W-7405-ENG-26
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

A computer code has been developed for application to ETF tokamak system and conceptual design studies. The code determines cost, performance, configuration, and technology requirements as a function of tokamak parameters. The ETF code is structured in a modular fashion in order to allow independent modeling of each major tokamak component. The primary benefit of modularization is that it allows updating of a component module, such as the TF coil module, without disturbing the remainder of the system code as long as the input/output to the modules remains unchanged. The modules may be run independently to perform specific design studies, such as determining the effect of allowable strain on TF coil structural requirements, or the modules may be executed together as a system to determine global effects, such as defining the impact of aspect ratio on the entire tokamak system. (ERA citation 05:039134)

CONF-801037-21 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
ETF Reactor Design Status.
P. H. Sager. 1980, 26p
Contract W-7405-ENG-26
American Vacuum Society conference, Detroit, MI, USA, 13 Oct 1980.

Conceptual design studies of a tokamak Engineering Test Facility (ETF) are being carried out as a joint laboratory-industry effort at the ETF Design Center at Oak Ridge National Laboratory (ORNL). Designs are being developed for two reactors, one with a bundle divertor and one with a poloidal divertor. These machines, which are designed for ignition and a burn time of 100 s, both have a major radius of 5.4 m, a plasma minor radius of 1.3 m, and a D-shaped plasma elongation of 1.6. The plasma chamber must be conditioned at 10 exp -7 torr. During the 35-s dwell between burns, the chamber must be pumped down from 5 x 10 exp -3 torr to 3 x 10 exp -5 torr. In the design with the bundle divertor four pairs of compound cryopumps, each pump with a 2-m exp 2 cryosorption pumping surface, are installed to pump down the plasma chamber. In the design with the poloidal divertor the plasma chamber is evacuated with the ten pairs of compound cryopumps, each pump with a cryosorption pumping surface of 4.32 m exp 2 , installed to handle the divertor load. In both cases the pumps are installed in pairs so that one set can be regenerated while the other set is online. (ERA citation 05:039135)

COO-2218-182 PC **A07**/MF **A01**
Illinois Univ. at Urbana-Champaign. Fusion Studies Lab.
Design Considerations for a Steady State Fusion Reactor's Thermal Energy Dump (TED) With Emphasis on SAFFIRE.
K. A. Werley. 1980, 143p
Contract AS02-76ET52040
Thesis.

This work examines the use of a thermal dump to handle the severe particle and energy handling requirements of a diverted plasma. We outline a general approach for evaluating the design parameters and limitations of a thermal dump, considering such things as thermomechanical and erosion effects, compatibility, availability, machinability, coolant recirculation, vacuum pumping, economics, lifetime, etc. To demonstrate how the performance requirements are reflected in design decisions, we apply a solid-walled dump to a small-sized field reversed mirror (FRM). We also examine a liquid-lithium droplet thermal dump and point out some distinct advantages of this new concept over the solid-wall design in reducing stress, erosion, and vacuum pumping problems. The chief disadvantages of this scheme include liquid-metal safe-handling problems, vapor pressure-temperature limitations, and the need for differential pumping if T/sub Li/ > 310 exp 0 C is desired. (ERA citation 05:039183)

DOE/ER/10087-T2 PC **A04**/MF **A01**
Thermacore, Inc., Lancaster, PA.
Investigation of Non-Magnetic Alloys for the Suppression of Tritium Permeation.
Jul 80, 54p
Contract AC05-79ER10087

The present work was aimed at identification of alloys which might combine low tritium permeation with other properties desired in fusion reactor vessels, heat exchangers, lithium-handling plumbing and other components likely to contain tritium. These properties include low radiation damage, low magnetic permeability, high temperature strength, and compatibility with potential heat transfer and blanket materials. The work consisted of two tasks: problem definition, and literature search and analysis. Task I was complicated by the incomplete status of fusion reactor development, particularly with respect to selection of coolant and blanket materials and temperatures. The approach taken was to establish a probable range of requirements. (ERA citation 05:039164)

DOE/ER/53092-T1 PC **A03**/MF **A01**
JAYCOR, Del Mar, CA.
One-Dimensional Model Calculations of EBT-P Performance.
S. Hamasaki, H. H. Klein, and J. B. McBride. 17 Oct 79, 44p
Contract AC03-80ER53092

Model calculations are described for possible EBT-P designs using a one-dimensional, fluid-transport code. We begin by giving a detailed description of our most updated and complete version of the code itself, so that the appendix is, as far as practical, self-contained. Calculations were performed with the code for the EBT-1 experiment to compare with previous ORNL calculations. One-dimensional calculations for possible EBT-P experimental designs were presented. (ERA citation 06:001672)

DOE/ER/53092-T2 PC **A03**/MF **A01**
JAYCOR, Del Mar, CA.
Wave Heating Models for Ion-Cyclotron Heating in EBT-S.
J. L. Sperling. 19 May 80, 32p
Contract AC03-80ER53092

Wave heating of ELMO BUMPY TORUS-SCALE (EBT-S) in the ion-cyclotron range of frequencies will be strongly influenced by the geometry of the plasma. In particular, the short finite length of the mirror sections means that the electron bounce frequency is of comparable magnitude to the ion-cyclotron frequency. Consequently, the bouncing motion of trapped particles impacts the electron absorption of wave energy. Furthermore, the varying magnetic field strength along magnetic field lines influences the ion-cyclotron absorption of waves because the ion-cyclotron resonance conditions are satisfied only at discrete points along the field lines. Expressions are given for trapped and passing electron absorption as well as ion-cyclotron absorption. A numerical example is also discussed. (ERA citation 06:001651)

DOE/ER/53092-T3 PC **A04**/MF **A01**
JAYCOR, Del Mar, CA.
Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
S. Hamasaki, H. H. Klein, N. A. Krall, J. B. McBride, and J. L. Sperling. Oct 80, 54p
Contract AC03-80ER53092

An introduction describes the critical importance of the relativistic electron rings to the EBT concept and the significance of electron-cyclotron heating to the formation and steady state of the rings. The relation and distinctive features of the present work to previous calculations of ring power balance are delineated. The plasma model used as the basis of the calculations is set up. Special emphasis is given to the development and description of a relativistically correct quasilinear expression. Equations for collisional, synchrotron radiation, and bremsstrahlung losses which are necessary for determining steady state annulus temperatures are written down. The energy loss and quasilinear heating equations are adapted to EBT geometry. A detailed accounting is given of spatial locations where quasilinear heating occurs for various elec-

tron cyclotron harmonics. The final section makes concluding remarks about the JAYCOR EBT ring model. A brief synopsis is given of the significant points deduced from the model, particularly as they relate to recent EBT experiments. Based on the results, suggestions for future refinements in the JAYCOR ring model are made which can permit improvement in the theoretical description of the EBT ring. (ERA citation 05:039108)

DOE/ET/53051-8 PC **A02**/MF **A01**
Wisconsin Univ.-Madison.
Abstracts of Papers Presented at the Twenty-Second Annual Meeting of the Division of Plasma Physics of the American Physical Society.
1980, 12p CONF-801119-(Exc.)(Absts.)
Contract AS02-76ET53051
22. annual meeting of the division of plasma physics of the APS, San Diego, CA, USA, 10 Nov 1980.

Nine abstracts are included in this document. (ERA citation 05:039119)

DOE/ET/53073-T1 PC **A03**/MF **A01**
Massachusetts Inst. of Tech., Cambridge.
Ballooning Mode Second Stability Region for Sequences of Tokamak Equilibria.
L. Sugiyama, and J. W. K. Mark. 39p
Contract AC02-78ET53073

A numerical study of several sequences of tokamak equilibria derived from two flux conserving sequences confirms the tendency of high n ideal MHD ballooning modes to stabilize for values of the plasma beta greater than a second critical beta, for sufficiently favorable equilibria. The major stabilizing effect of increasing the inverse rotational transform profile q(Psi) for equilibria with the same flux surface geometry is shown. The unstable region shifts toward larger shear d ln q/d ln gamma and the width of the region measured in terms of the poloidal beta or a pressure gradient parameter, for fixed shear, decreases. The smaller aspect ratio sequences are more sensitive to changes in q and have less stringent limits on the attainable value of the plasma beta in the high beta stable region. Finally, the disconnected mode approximation is shown to provide a reasonable description of the second high beta stability boundary. (ERA citation 05:039132)

DOE/TIC-11281 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Magnetic Fusion Experiments at Oak Ridge National Laboratory (ORNL).
H. Postma. 35p
Contract W-7405-ENG-26

All the fusion research at Oak Ridge National Laboratory is magnetic-fusion-related and is concentrated in three broad areas. One is magnetic toroidal confinement, utilizing two concepts: a tokamak device called ISX (Impurity Studies Experiment) and a bumpy torus concept called EBT. The second broad area consists of engineering efforts in support of existing (as well as future) confinement devices, such as neutral beams for neutral-beam heating, superconducting magnets, materials likely to be used in the first wall of a fusion reactor, fusion reactor design, theory, electron cyclotron resonance heating, diagnostic development; and measurements of cross sections. (ERA citation 06:001699)

DOE/TIC-11282 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Engineering Test Facility (ETF) At Oak Ridge National Laboratory (ORNL).
H. Postma. 42p
Contract W-7405-ENG-26

Fusion reactor concepts must surmount three traditional barriers. 1) Heating - an efficient method must be found to bring the plasma of thermonuclear temperature to 10 to 15 kV. 2) Stability - the confining magnetic configuration should be stable at plasma beta 's of roughly 5% in order to have practical fusion power densities. 3) Confinement - the transport of the plasma should be so slow that the quantity (nt) exceeds approximately 2 x 10 exp 14 particles/cm exp 3 /sec at thermonuclear temperatures. The efforts of the ETF design team are outlined. (ERA citation 06:001700)

EPRI-AP-1544 PC **A16**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Field-Reversed Mirror Pilot Reactor. Annual Report.
R. S. Devoto, J. L. Erickson, and J. H. Fink. Sep 80, 368p
Contract W-7405-ENG-48

This report concludes a two-year effort to design a near-term small-scale fusion power plant which, through its construction and operation, would be a direct and important step toward the commercialization of fusion energy. The fusion reactor pilot plant was designed under the ground rules that it must produce net power, be compact, have minimum total cost, and use near-term (late 1980's) engineering technology. The neutral beam driven, field-reversed mirror (FRM) was selected as the fusion plasma confinement concept around which the pilot plant was designed. Although the physics data base for this design is not yet well in hand, it is being pursued within the magnetic field-reversal framework of the US Mirror Fusion Program. Depending on the plasma size, the pilot plant would gross up to 19.8 MW(e) and would produce up to 10.7 MW(e) net, with the recirculated power used principally for the neutral beam injectors and refrigeration for the superconducting magnets. (ERA citation 06:001695)

EUR-CEA-FC-1013 PC **A02**/MF **A01**
Association Euratom-CEA sur la Fusion, Centre d'Etudes Nucleaires de Fontenay-aux-Roses (France). Dept. de Physique du Plasma et de la Fusion Controlee.
Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
D. Edery, R. Pellat, and J. L. Soule. Sep 79, 13p
U.S. Sales Only.

Following the tokamak ordering, we simplify the resistive MHD equations in toroidal geometry. We obtain a closed system of non linear equations for two scalar potentials of the magnetic and velocity fields and for plasma density and temperature. If we expand these equations in the inverse of aspect ratio they are exact to the two first orders. Our formalism should correctly describe the mode coupling by curvature effects /1/ and the toroidal displacement of magnetic surfaces /2/. It provides a natural extension of the well known cylindrical model /3/ and is now being solved on computer. (Atomindex citation 11:519306)

GA-A-15974 PC **A05**/MF **A01**
General Atomic Co., San Diego, CA.
Team One (GA/MCA) Effort of the DOE 12 Tesla Coil Development Program. 12 Tesla ETF Toroidal Field Coil Helium Bath Cooled NbTi Alloy Concept.
Jul 80, 93p
Contract AT03-76ET51011

This report presents the conceptual design of an ETF compatible toroidal field coil, employing helium bath cooled NbTi alloy conductor. The ten TF-coil array generates a peak field of 11-1/2 tesla at 2.87 m radius, corresponding to a major axis field of 6.1 tesla. The 10 kA conductor is an uninsulated, unsoldered Rutherford cable, employing NbTiTa ally as developed in Phase I of this effort. The conductor is encased within a four element frame of stainless steel strips to provide hoop and bearing load support. (ERA citation 05:039149)

GA-A-16013 PC **A02**/MF **A01**
General Atomic Co., San Diego, CA.
Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
W. Y. Chen, J. S. Alcorn, Y. H. Hsu, and J. R. Purcell. Sep 80, 7p CONF-800980-15
Contract AT03-76ET51011
Applied superconductivity conference, Santa Fe, NM, USA, 29 Sep 1980.

Stability analysis has been performed for cabled NbTi-Ta-based superconductors intended for the high field (12 T) toroidal field coils for a large scale tokamak device such as ETF. Ternary NbTi-Ta was selected as the superconductor because of its superior critical current density at high field as compared to the binary alloy NbTi. The operating temperature was chosen to be 2.5 K or below to optimize the performance of the superconductor. A cabled conductor was selected to minimize the pulsed field losses. The conductor is cooled by pool boiling in a subcooled (approx. 2.5 K, 0.25 atm) bath, or in a superfluid helium (He-II) bath (approx. 1.8 K, 0.02 atm). The analysis was based on numerically simulating the evolution of a normal zone in the conductor. Appropriate superconductor properties and heat transfer characteristics were utilized in the simulation. (ERA citation 05:039151)

GA-A-16072 PC **A02**/MF **A01**
General Atomic Co., San Diego, CA.
Preliminary Radiation Criteria and Nuclear Analysis for ETF.
B. A. Engholm. Sep 80, 12p CONF-801011-28
Contract AT03-76ET51011
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

Preliminary biological and materials radiation dose criteria for the Engineering Test Facility are described and tabulated. In keeping with the ETF Mission Statement, a key biological dose criterion is a 24-hour shutdown dose rate of 2 mrem/hr on the surface of the outboard bulk shield. Materials dose criteria, which primarily govern the inboard shield design, include 10 exp 9 rads exposure limit to epoxy insulation, 3 x 10 exp -4 dpa damage to the TF coil copper stabilizer, and a total nuclear heating rate of 5 kW in the inboard TF coils. Nuclear analysis performed during FY 80 was directed primarily at the inboard and outboard bulk shielding, and at radiation streaming in the neutral beam drift ducts. Inboard and outboard shield thicknesses to achieve the biological and materials radiation criteria are 75 cm inboard and 125 cm outboard, the configuration consisting of alternating layers of stainless steel and borated water. The outboard shield also includes a 5 cm layer of lead. NBI duct streaming analyses performed by ORNL and LASL will play a key role in the design of the duct and NBI shielding in FY 81. The NBI aluminum cryopanel nuclear heating rate during the heating cycle is about 1 milliwatt/cm exp 3 , which is far less than the permissible limit (ERA citation 06:001743)

GA-A-16089 PC **A02**/MF **A01**
General Atomic Co., San Diego, CA.
First Wall Engineering and Technology in Fusion.
G. R. Hopkins. Sep 80, 15p CONF-801011-30
Contract AT03-76ET51011
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

The first wall of a fusion reactor presents a particularly difficult engineering design problem because of the severe environment in which it must operate, yet remain useful over a reasonable lifetime. All the plasma emanations interact with the first wall. Plasma particles cause erosion and heating, electromagnetic radiation produces heating, and neutrons cause radiation damage and potentially high radioactive material inventories. The energy partition between the radiation and particle loads has a high uncertainty at this stage of development and it would be desirable to control this for fusion power reactors. Plasma disruptions cause high pulsed heat loads, with magnitudes sufficient to melt and vaporize refractopy materials. With the worst projections, first wall lifetimes would be unduly short in power reactors. With continuing attention to the disruption phenomenon, however, the experience gained in experimental power devices should provide the background for plasma boundary region control to prevent surface erosion, and to limit the number and intensity of plasma disruptions. (ERA citation 06:001744)

IPP-4/179 PC **A03**/MF **A01**
Max-Planck-Inst. fuer Plasmaphysik, Garching (Germany, F.R.).
Ignition Experiment - Alternatives.
A. F. Knobloch. Oct 79, 27p
In German.
U.S. Sales Only.

This report comprises three short papers on cost estimates, integral burn time and alternative versions of Tokamak ignition experiments. These papers were discussed at the ZEPHYR workshop

with participants from IPP Garching, MIT Cambridge and PPPL Princeton (Garching July 30 - August 2 1979) (Chapters A, B, C). g.) 891 HT/orig. 892 RKD. (Atomindex citation 11:519356)

IPP-4/180 PC **A04**/MF **A01**
Max-Planck-Inst. fuer Plasmaphysik, Garching (Germany, F.R.).
MHD Pressure Losses in Pipeline Systems for Toroidal Fusion Reactors.
W. Daenner, and M. Korzen. Aug 79, 75p
In German.
U.S. Sales Only.

For a toroidal fusion reactor of specified size the blanket of which is to be cooled by liquid lithium the MHD pressure losses are calculated for a number of coolant supply concepts. One concept (radial concept) starts from the assumption that the coolant is distributed over the poloidal circumference of the reactor by means of a ring conduit located outside the magnetic field. The various blanket units are connected to this header by a great number of radially oriented pipes. The second concept (poloidal concept) is characterized by a ring conduit located inside the magnetic field. Some different solutions based on this concept are being investigated. (orig.) 891 HT/orig. 892 CS. (Atomindex citation 11:519295)

IPP-4/182 PC **A02**/MF **A01**
Max-Planck-Inst. fuer Plasmaphysik, Garching (Germany, F.R.).
Maximum Attainable Power Density and Wall Load in Tokamaks Underlying Reactor Relevant Constraints.
K. Borrass, and R. Buende. Sep 79, 23p
U.S. Sales Only.

The characteristic data of tokamaks optimized with respect to their power density or wall load are determined. Reactor relevant constraints are imposed, such as a fixed plant net power output, a fixed blanket thickness and the dependence of the maximum toroidal field on the geometry and conductor material. The impact of finite burn times is considered. Various scaling laws of the toroidal beta with the aspect ratio are discussed. (orig.) 891 GG/orig. 892 RDG. (Atomindex citation 11:519275)

JEN-459 PC **A04**/MF **A01**
Junta de Energia Nuclear, Madrid (Spain).
Plasmator. A Numerical Code for Simulation of Plasma Transport in Tokamaks.
J. Guasp. 1979, 59p
In Spanish.
U.S. Sales Only.

Plasmator is a flexible monodimensional numerical code for plasma transport in Tokamaks of circular cross-section, it allows neutral particle transport and impurity effects. The code leaves a total freedom in the analytical form of transport coefficients. It has been writen in Fortran-V for the UNIVAC-1100/80 from JEN and allows for the possibility of graphics for radial profiles and temporal evolution of the main plasma magnitudes, as well in three-dimensional as in two-dimensional representation either on a Calcomp plotter or in the printer. (Atomindex citation 11:529160)

LA-8488-T PC **A07**/MF **A01**
Los Alamos Scientific Lab., NM.
Theory of the Arc Discharge in Air Blast Breakers.
H. F. Vogel. Aug 80, 130p
Contract W-7405-ENG-36
Thesis.

The complete set of equations obtaining in the arc's length element are given. The arc length is determined when the external circuit equations are closed by an expression for the arc inductance as a function of the radius and length, in addition to our relationships for the radius and voltage gradients. (ERA citation 06:001713)

LBL-11429 PC **A02**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Rapporteur Talk for IAEA Fusion Meeting, Brussels.
J. M. Watson, R. C. Arnold, and J. M. Bogaty. Jul 80, 11p CONF-800707-23
Contract W-7405-ENG-48
International conference on plasma physics and controlled nuclear fusion research, Brussels, Belgium, 1 Jul 1980.

A brief review of the following research topics is given: (1) accelerator drivers; (2) the Argonne heavy ion fusion program; (3) multimegajoule heavy-ion induction linacs; and (4) fusion applications of the Megalac. (ERA citation 06:001727)

NIIEFA-P-A-0424 PC **A02**/MF **A01**
Nauchno-Issledovatel'skii Inst. Elektrofizicheskoi Apparatury, Leningrad (USSR).
Peculiarities of Radiation Heat Transfer of Structural Elements of High-Temperature Physical Installations.
V. A. Divavin, and V. N. Tanchuk. 1979, 10p
In Russian.
U.S. Sales Only.

To optimize high temperature vacuum heating of vacuum chambers in plasma installations for their degasing considered is stationary heat regime of vacuum heating of cylindric surfaces using wire heaters placed in insulating tube outside the sought for surface. The surface is supposed to be reradiating and adiabatic. The concept of limiting as to temperature spacing of the heaters allocation is introduced. The system of equations is obtained, which connects the surface temperatures determined with the resulting heat fluxes. The similarity of the calculation scheme is ensured by introduction of n-series screen. Calculation results as applied to branch pipes of thermonuclear "T-1OM" installation are presented. Comparison with the scheme of inner arrangement of surfaces is given. (Atomindex citation 11:519300)

NIIEFA-P-B-0430 PC **A02**/MF **A01**
Nauchno-Issledovatel'skii Inst. Elektrofizicheskoi Apparatury, Leningrad (USSR).
Analysis of the System of Poloidal Fields in the "T-10M" Device.
Eh. N. Bondarchuk, N. I. Doinikov, and G. I. Shmal'ko. 1979, 13p
In Russian.
U.S. Sales Only.

Results of numerical simulation of inductor field and operating conditions of the system of poloidal field of the "T-10M" device are presented. Considered is a variant with outer as to the toroidal field winding (TFW) control winding (CW). Inductor and CW form primary winding of the transformer, plasma filament being secondary one. The inductor calculation is carried out with an account of non-linear element in magnetic chain of iron core, which is at the induction of B<=3.3 T. Dimer axially symmetric task is considered. Results of numerical simulation of the inductor field for one-turn variant of the inductor are presented. In all the range of the inductions considered the values of scattering fields and the field gradient in the filament centre do not exceed corresponding values of 3x10 exp -3 T and 0.68x10 exp -2 T/m. Two models of the discharge development are considered: a) the discharge is formed simultaneously all over the volume of the chamber with the radius a=0.7 m, b) at first the discharge is formed in the central part of the chamber with a=0.3 m, where the mean current density reaches the greatest value; the further increase in current results from the low radius increase at constant mean current density. Calculation results of field and forces affecting the TFW at sudden disappearance of current in a plasma are presented. (Atomindex citation 11:519271)

NRL-MR-4319 PC **A02**/MF **A01**
Naval Research Lab., Washington, DC.
Doppler Velocimeter for Laser Accelerated Targets.
S. P. Obenschain, E. A. McLean, and S. H. Gold. 28 Aug 80, 14p
Contract AI01-77DP40042

A doppler velocimeter utilizing a spectrograph and a short pulse laser probe is described which provides good spatial (20 mu m) and subnanosecond temporal resolution. This system has been used to measure the velocity profiles of targets ablatively accelerated to very high velocities by a high power laser beam. A unique aspect of this velocimeter is that the doppler wavelength shifts are measured directly rather than employing interferometric techniques. (ERA citation 05:039174)

NRL-MR-4350 PC **A02**/MF **A01**
Naval Research Lab., Washington, DC.
Laser Fusion Studies at NRL.
J. McMahon, J. Orens, and S. Bodner. 8 Oct 80, 22p
Contract AI01-77DP40042

The NRL group is studying the technical feasibility of high gain laser fusion pellets driven by low irradiance (10 exp 14 W/cm exp 2) multi-nanosecond lasers. In earlier experiments, it was shown that both absorption and hydrodynamic efficiencies were consistent with high gain pellet designs. In addition to extending this work to greater intensities and larger spot sizes, research is underway on the origins and magnitude of target preheating at low irradiance, on experimental and theoretical work on the issue of symmetry and into the related questions of Rayleigh-Taylor instability and mixing of layers in multi-layer targets. Substantial progress has been made in all of these areas: the rear surfaces of slab targets have been ablatively accelerated to velocities above 10 exp 7 cm/sec with acceptably low levels of preheat and there is experimental evidence of smoothing of spatial nonuniformities in the laser profile on a transverse scale of 100 mu m or less. (ERA citation 06:001729)

NRL-MR-4356 PC **A02**/MF **A01**
Naval Research Lab., Washington, DC.
Preheat Studies on Laser Ablatively-Accelerated Foils.
E. A. McLean, S. H. Gold, J. A. Stamper, R. R. Whitlock, and H. R. Griem. 13 Oct 80, 18p
Contract AI01-77DP40042

The achievement of laser fusion requires the inward acceleration of pellet shells to very high velocity without excessive preheat of the pellet fuel. In a study of ablatively accelerated thin planar Al foils, we have determined the complete time history of the rear surface temperatures, and evaluated the energy transport mechanisms that contribute to the heating. Extrapolation to larger, reactor-sized pellets indicates that preheat is minimal at low laser irradiances. (ERA citation 06:001730)

ORNL/TM-7122 PC **A10**/MF **A01**
Oak Ridge National Lab., TN.
R And D Needs Assessment for the Engineering Test Facility.
Oct 80, 203p
Contract W-7405-ENG-26

The Engineering Test Facility (ETF), planned to be the next major US magnetic fusion device, has its mission (1) to provide the capability for moving into the engineering phase of fusion development and (2) to provide a test-bed for reactor components in a fusion environment. The design, construction, and operation of the ETF requires an increasing emphasis on certain key research and development (R and D) programs in magnetic fusion in order to provide the necessary facility design base. This report identifies these needs and discusses the apparent inadequacies of the presently planned US program to meet them, commensurate with the ETF schedule. (ERA citation 05:039139)

ORNL/TM-7124(Dr) PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.
W. A. Houlberg, H. C. Howe, and S. E. Attenberger. 1980, 37p CONF-800874-1(Dr)
Contract W-7405-ENG-26
Varenna workshop on physics of plasmas close to thermonuclear conditions, Varenna, Italy, 27 Aug 1980.

Fueling by pellets and neutral gas in the presence of a divertor is examined with a one-dimensional multispecies transport code. Deuterium, tritium, and alpha particles are treated as independent thermal species. With an efficiently operating divertor, it becomes impossible to maintain high plasma density (anti n approx. 10 exp 14 cm exp -3) with neutral gas fueling alone because of the high probability of the gas being ionized in the scrapeoff layer. Pellet fueling significantly reduces the parti-

cle load on the divertor and, with feedback control, can maintain the plasma density at the desired level. A low level of deuterium gas fueling can then be used to maintain the density of the scrapeoff layer and increase shielding against sputtered impurities. Even with an effective shielding divertor, the energy and particle fluxes to the first wall from both charged and neutral particles may be significant. The fluctuations at the plasma edge and in the scrapeoff layer introduced by the pellets cause the particle and energy fluxes to the divertor and first wall to fluctuate. This makes simulation more difficult but may be used to experimentally determine radial and parallel transport properties in the scrapeoff layer. Recommendations for further study are made. (ERA citation 05:039162)

ORNL/TM-7452 PC **A04**/MF **A01**
Oak Ridge National Lab., TN.
ISX-B Neutral Beams and the Beam Target Experiment.
S. C. Bates, P. H. Edmonds, J. Kim, C. E. Bush, and L. A. Massengill. Oct 80, 63p
Contract W-7405-ENG-26

This report describes the hardware and operation of the ISX neutral beamlines as well as an experiment done to verify estimates of the neutral power injected into the tokamak. Tangential coinjection of megawatt levels of 30 to 40-keV neutrals into the tokamak has made the study of high-beta plasmas in ISX possible. These power levels were achieved with high reliability (over 90%) by two neutral beamlines with design power ratings of 900 kW of H exp 0 (upgraded to 1.5 MW) each. The neutral beamlines consist of a duoPIGatron plasma generator, acceleration grids, a gas neutralization cell, an ion deflection magnet, beam calorimetry, high-speed helium cryocondensation vacuum pumps, and associated electrical and control systems. The beamlines and their operation are described briefly with an emphasis on their relation to injection into a plasma. Neutral injection geometry with respect to the tokamak is given. (ERA citation 05:039109)

ORNL/TM-7503 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Currents Induced in Tokamaks by Electron Cyclotron Heating.
O. C. Eldridge. Oct 80, 34p
Contract W-7405-ENG-26

Generation of a plasma current is predicted in association with strong electron cyclotron heating in tokamaks or in any plasma with transverse magnetic field gradients. The current predicted in present-day tokamaks is of the order of one-quarter ampere per watt, which is large enough to be detected in heating experiments in progress. The current scales linearly with electron temperature and heating power and inversely with density and major radius. The mechanism depends on the Doppler shift for electrons streaming along magnetic field lines. Electrons streaming toward the source of radiation are resonant at a larger magnetic field. When the interaction is strong, radiation incident from the high field side is absorbed before reaching the cold electron resonant surface, and, so, a unidirectional population of electrons is heated. The anisotropic electron distribution gains momentum by collisions with ions. For small tokamaks the extraordinary wave should be launched for current drive, but for reactors the ordinary wave produces a sufficiently strong interaction. (ERA citation 05:039110)

PNL-2720 PC **A10**/MF **A01**
Battelle Pacific Northwest Labs., Richland, WA.
Preconceptual Design and Assessment of a Tokamak Hybrid Reactor.
V. L. Teofilo, B. R. Leonard, Jr., and D. T. Aase. Sep 80, 201p
Contract AC06-76RL01830

The preconceptual design of a commercial Tokamak Hybrid Reactor (THR) power plant has been performed. The tokamak fusion driver for this hybrid is operated in the ignition mode. The D-T fusion plasma, which produces 1140 MW of power, has a major radius of 5.4 m and a minor radius of 1.0 m with an elongation of 2.0. Double null poloidal divertors are assumed for impurity control. The confining toroidal field is maintained by D-shaped Nb sub 3 Sn superconducting magnets with a maximum field of 12T at the coil. Three blankets with four associated fuel cycle alternatives have been combined with the ignited tokamak fusion driver. The engineering, material, and balance of plant design requirements for the THR are briefly described. Estimates of the capital, operating and maintenance, and fuel cycle costs have been made for the various driver/blanket combinations and an assessment of the market penetrability of hybrid systems is presented. An analysis has been made of the nonproliferation aspects of the hybrid and its associated fuel cycles relative to fission reactors. The current and required level of technology for both the fusion and fission components of the hybrid system has been reviewed. Licensing hybrid systems is also considered. (ERA citation 05:039140)

PPPL-1695 PC **A03**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Neutronics Calculations for the TFTR Neutron Calorimeter.
G. R. Imel. Sep 80, 40p
Contract AM02-76CH03073

Neutronics analyses have been performed for an adiabatic neutron calorimeter consisting of a pure hydrocarbon moderator located just outside of the vacuum vessel of the Tokamak Fusion Test Reactor. One and two-dimensional neutronic analyses show that the incident fusion neutron fluence can be determined to +- 10% uncertainty by simply integrating measured temperature profiles along the central radial axis (and assuming negligible error in the temperature measurement). The +- 10% uncertainty is found to be due to gamma rays produced by inelastic scattering and exothermic capture reactions in the moderator and vacuum vessel. The perturbing effects due to the toroidal field coils and due to gamma rays entering the sides of the calorimeter are shown to be negligible in the region of the central axis. (ERA citation 06:001662)

PPPL-1697 PC **A02**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Mode Converter for Electron Cyclotron Resonance Heating of Toroidal Plasmas.
R. W. Motley, H. Hsuan, and J. Glanz. Sep 80, 16p
Contract AM02-76CH03073

A method is proposed for improving the efficiency of cyclotron resonance heating of a toroidal plasma by ordinary mode radiation from the outside of the torus. Radiation not absorbed in the first pass is reflected from the inside of the torus by a corrugated surface which rotates the polarization by 90 exp 0 , so that a secondary source of extraordinary waves is created in the high field, accessible region of the plasma. (ERA citation 05:039111)

PPPL-1707 PC **A02**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Disruptive Shift of Magnetic Axis in Non-Circular Tokamaks.
M. Okabayashi, H. Maeda, H. Takahashi, and M. Reusch. Sep 80, 14p
Contract AM02-76CH03073

The magnitude of magnetic axis shift, following a sudden, disruptive decrease in internal inductance and poloidal beta , can be greatly reduced in noncircular tokamaks by exploiting the negative decay index of the equilibrium magnetic field. In this sense a non-circular plasma has important advantages over a circular plasma in preventing the catastrophic consequences of major disruptions. A tokamak design and operational concept is discussed, which exploits these advantages, and is fundamentally different from the traditional approach. (ERA citation 05:039157)

PPPL-1709 PC **A02**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Anomalous Transport Due to Shear-Alfven Waves.
W. W. Lee, M. S. Chance, and H. Okuda. Oct 80, 14p
Contract AM02-76CH03073

The behavior of shear-Alfven eigenmodes and the accompanied anomalous transport have been investigated. In the particle simulation, equilibrium thermal fluctuations associated with the eigenmodes have been observed to nullify the zeroth-order shear near the rational surface through the induced second-order eddy current, and, in turn, give rise to the formation of magnetic islands which cause rapid electron energy transport in the region. The theoretical verification of the observed behavior is discussed. (ERA citation 06:001674)

PPPL-1712 PC **A02**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
S. Suckewer, J. Cecchi, S. Cohen, R. Fonck, and E. Hinnov. Oct 80, 12p
Contract AM02-76CH03073

Magnetic dipole lines in ScXIII - XVII and resonance lines of ScXVIII - XIX were observed and identified. Advantages of ion thermometry by means of tracer element injection are described. (ERA citation 06:001663)

PPPL-1713 PC **A02**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Ion Cyclotron Heating of Plasmas with Two-Ion Components.
S. Yoshikawa. Oct 80, 15p
Contract AM02-76CH03073

The explanation of observed ion cyclotron heating in PLT was tried using cold wave theory. The theory allowing for mode conversion and/or tunneling effects explains the observed plasma heating. (ERA citation 06:001653)

PPPL-1718 PC **A03**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Analytical Study of the External Field for Non-Circular Tokamak with Multipole Moment Expansion Approach.
O. Okada, J. DeLucia, and M. Okabayashi. Oct 80, 31p
Contract AM02-76CH03073

An analytical study is made of the external field required to produce non-circular toroidal MHD equilibria. Here the external magnetic flux pattern is formulated with a series of multipole moments expanded around the magnetic axis. The present approach provides a common description of the external field characteristics of various devices rather than specifying location of poloidal coils. Furthermore, the preconceptual design of noncircular devices can be simplified since the arrangement of poloidal coil location is decoupled from the physics requirement. (ERA citation 06:001708)

PPPL-1719 PC **A03**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Material Selection for TFTR Limiters.
M. Ulrickson. Oct 80, 41p
Contract AM02-76CH03073

The requirements for the material to be used as the first surface of limiters in TFTR are that it: (1) withstand a heat flux of 1 kw/cm exp 2 for a pulse length of 1.5s and a duty cycle of 1/200 for 10 exp 5 cycles, (2) withstand the thermal and electromagnetic loads from 10 exp 4 plasma current disruptions lasting about 200 mu s, (3) generate impurities at a rate low enough to meet impurity control requirements (which depend on the atomic number of the material) for TFTR, and (4) have tritium retention characteristics consistent with tritium inventory requirements for TFTR. An extensive set of material tests using electron beams, neutral beams, and plasma bombardment have been carried out to identify materials which can meet the thermal requirements of the above. (ERA citation 06:001745)

SAND-79-1944 PC **A10**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Particle Beam Fusion Progress Report January 1979 Through June 1979.
Oct 80, 205p
Contract AC04-76DP00789

The following chapters are included: (1) fusion target studies, (2) target experiments, (3) particle beam source development, (4) particle beam ex-

periments, (5) pulsed power research and development, (6) pulsed fusion applications, and (7) electron beam fusion accelerator project. (ERA citation 05:039175)

UCAR-10042-80 PC **A07**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
National Mirror Fusion Program Plan.
Jan 80, 129p
Contract W-7405-ENG-48

Experiments are under way in the Tandem Mirror Experiment (TMX) facility at Livermore, which was built to test the principles of the new tandem-mirror concept. Recently this idea has been greatly improved by incorporating a new element called the thermal barrier, a concept that promises a higher power gain factor (Q = 10 to 20) with much less demanding neutral-beam and magnet technology and a higher fusion power density in the reactor. In addition to the tandem-mirror experiments in TMX, a new attempt will be made in the Beta II facility during FY 1980 to create and sustain a field-reversed mirror configuration, which is a different mirror fusion approach that could lead to early commercialization of small reactors. The plan presented here is designed to exploit the results of these and other mirror experiments and theoretical developments toward a variety of applications. The main objective is electric power generation. Other applications being studied include a hybrid fusion reactor that breeds fuel for fission reactors and a reactor for producing synthetic fuel (H sub 2) by means of thermochemical processes. (ERA citation 05:039141)

UCRL-15284 PC **A02**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Symbolic Software for CTR Research.
M. Griss. 26 Sep 80, 8p
Contract W-7405-ENG-48

This report will describe the final status of the REDUCE Software Development discussed in the original proposal. The overall goal was to make the powerful interactive Computer Algebra System, REDUCE, available to CTR researchers with access to the CTR network. The original proposal entailed the maintenance the PDP-10 version of REDUCE, to be distributed on the CTR Network; the implementation and enhancement of a 7600 version of REDUCE; the provision of suitable documentation, tutorial and consulting services; and the exploration of a more portable (FORTRAN-based) REDUCE for the newer MFE machines. (ERA citation 06:001747)

UCRL-15292 PC **A05**/MF **A01**
Grumman Aerospace Corp., Bethpage, NY.
Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
R. Bullis, M. Finkelman, J. Leng, T. Luzzi, and I. Ojalvo. Aug 80, 95p
Contract W-7405-ENG-48

These Inertial Confinement Fusion (ICF) research and development studies were selected for structural, thermal, and vacuum pumping analyses in support of the High Yield Lithium Injection Fusion Energy (HYLIFE) concept development. An additional task provided an outlined program plan for an ICF Engineering Test Facility, using the HYLIFE concept as a model, although the plan is generally applicable to other ICF concepts. The HYLIFE is one promising type of ICF concept which features a falling array of liquid lithium jets. These jets surround the fusion reaction to protect the first structural wall (FSW) of the vacuum chamber by absorbing the fusion energy, and to act as the tritium breeder. The fusion energy source is a deuterium-tritium pellet injected into the chamber every second and driven by laser or heavy ion beams. The studies performed by Grumman have considered the capabilities of specific HYLIFE features to meet life requirements and the requirement to recover to preshot conditions prior to each subsequent shot. The components under investigation were the FSW which restrains the outward motion of the liquid lithium, the nozzle plate which forms the falling jet array, the graphite shield which is in direct top view of the fusion pellet, and the vacuum pumping system. The FSW studies included structural analysis, and definition of an experimental program to validate computer codes describing lithium motion and the resulting impact on the wall. (ERA citation 06:001732)

UCRL-83794 PC **A03**/MF **A01**
Lawrence Livermore National Lab., CA.
Recent Laser-Plasma Interaction Experiments at the Lawrence Livermore National Laboratory.
P. H. Y. Lee. 1980, 26p CONF-800555-3
Contract W-7405-ENG-48
International conference on lasers, Shanghai, China, 3 May 1980.

Recent Livermore experiments are aimed at investigating laser-plasma interaction issues which are relevant to ablatively driven fusion processes. We report the data obtained from using longer pulses and shorter laser wavelengths. (ERA citation 06:001733)

UCRL-84233 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Buildup Studies of a Tandem Mirror Reactor with Inboard Thermal Barriers.
G. E. Gryczkowski, and J. M. Gilmore. 9 Oct 80, 10p CONF-801011-13
Contract W-7405-ENG-48
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

The build-up and quasi-steady state phases of the operation of the tandem mirror experiment, TMX, and of a tandem mirror machine with inboard thermal barriers, MFTF-B, have been simulated using a fluid model of the central cell and plug plasmas. The fluid model incorporates classical radial transport, three-dimensional cold gas transport in cylindrical geometry, and neutral beam transport corrected for finite-Larmor-orbit effects in both the central cell and yin yang end plugs. (ERA citation 06:001654)

UCRL-84235 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Technology of Direct Conversion for Mirror Reactor End-Loss Plasma.
W. L. Barr, and R. W. Moir. 7 Oct 80, 11p CONF-801011-6
Contract W-7405-ENG-48
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

Design concepts are presented for plasma direct convertors (PDC) intended primarily for use on the end-loss plasma from tandem-mirror reactors. Recent experimental results confirm most of these design concepts. Both a one-stage and a two-stage PDC were tested in reactor-like conditions using a 100-kV, 6-kW ion beam. In a separate test on the end of the TMX machine, a single stage PDC recovered 79 W for a net efficiency of 50%. Tandem mirror devices are well suited to PDC. The high minimum energy of the end-loss ions, the magnetic expansion outside the mirrors, and the vacuum conditions in the end tanks required by the confined plasma, all preexist. The inclusion of a PDC is therefore a rather small addition. These facts and the scale parameters for a PDC are discussed. (ERA citation 05:039166)

UCRL-84271 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Consistent HYLIFE Wall Design That Withstands Transient Loading Conditions.
J. H. Pitts. Oct 80, 9p CONF-801011-4
Contract W-7405-ENG-48
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

The design for a first structural wall (FSW) promises to satisfy the impact and thermal stress loads for the 30-year lifetime anticipated for the HYLIFE reaction chamber. The FSW is a 50-mm-thick cylindrical plate that is 10 m in diameter; it can withstand a rapidly varying liquid metal impact stress up to a peak of 60 MPa, combined with slowly varying thermal stresses up to 86 MPa. We selected 2 1/4 Cr-1 Mo ferritic steel as the structural material because it has adequate fatigue properties and yield strength at the peak operating temperature of 810 exp 0 K, is compatible with liquid lithium, and has good neutron activation characteristics. (ERA citation 05:039178)

UCRL-84272 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Parametric Analysis of Stress in the ICF HYLIFE Converter Structure.
J. Hovingh, and J. A. Blink. Oct 80, 11p CONF-801011-12
Contract W-7405-ENG-48
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

The concept of a liquid-metal first wall in an ICF energy converter has a particularly attractive feature: the liquid metal absorbs the short-ranged fusion energy and moderates and attenuates the neutron energy so that the converter structure may have a lifetime similar to that of a conventional power plant. However, the sudden deposition of fusion energy in the liquid-metal first wall will result in disassembly of the liquid, which then impacts on the structure. The impact pressure on the structure is a strong function of the location and thickness of the liquid-metal first wall. The impact stress is determined by the impact pressure and duration and by the thickness and location of the structure. The maximum allowable stress is determined by the design stress criteria chosen by the structural designer. Scaling laws for the impact pressure as a function of the liquid-metal first wall location and mass are presented for a 2700 MW(f) (fusion power) plant with either one or four fusion reactor vessels. A methodology for determining the optimum combination of liquid-metal first wall geometry and first-structural-wall thickness is shown. Based on the methodology developed, a parametric analysis is presented of the liquid-metal flow rate and first-structural-wall requirements. (ERA citation 05:039144)

UCRL-84273 PC **A02**/MF **A01**
Energy Technology Engineering Center, Canoga Park, CA.
Properties of Lead-Lithium Solutions.
N. J. Hoffman, A. Darnell, and J. A. Blink. Oct 80, 11p CONF-801011-9
Contract W-7405-ENG-48
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

Lead-lithium solutions are of interest to liquid metal wall ICF reactor designers because Pb may be present to some extent in both heavy ion beam and laser-driven ICF targets; therefore, Pb will be present as an impurity in a flowing lithium wall. In addition, Pb-Li solutions containing approx. 80 a/o Pb are a strong candidate for a heavy ion beam driven HYLIFE converter and a viable alternative to a pure Li wall for a laser driven converter. The properties of Pb-Li solutions including the effect of hydrogen impurities are reviewed, and the reactor design implications are discussed. (ERA citation 05:039145)

UCRL-84275 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
ICF ETF And Its Engineering Development Requirements.
J. A. Blink, W. O. Allen, and K. Billman. Oct 80, 9p CONF-801011-8
Contract W-7405-ENG-48
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

Inertial confinement fusion driver development and ICF target physics are being intensively explored both theoretically and experimentally. However, engineering considerations of harnessing the fusion energy pulses that are an ultimate product and goal of the ICF physics program are only being addressed on a small scale. Experience with development of other new technologies indicates that engineering development time will be substantial for ICF energy converters. The authors met at Livermore in July 1980 to form an ICF Reactor Technology Working Group to address this issue. This paper outlines the current state of planning for an ICF Engineering Test Facility (ETF) and the engineering development that must precede it. (ERA citation 05:039179)

UCRL-84463 PC **A03**/MF **A01**
Lawrence Livermore National Lab., CA.
Metallic Coating of Microspheres.
S. F. Meyer. 15 Aug 80, 34p CONF-801037-20
Contract W-7405-ENG-48
American Vacuum Society conference, Detroit, MI, USA, 13 Oct 1980.

Extremely smooth, uniform metal coatings of micrometer thicknesses on microscopic glass spheres (microspheres) are often needed as targets for inertial confinement fusion (ICF) experiments. The first part of this paper reviews those methods used successfully to provide metal coated microspheres for ICF targets, including magnetron sputtering, electro- and electroless plating, and chemical vapor pyrolysis. The second part of this paper discusses some of the critical aspects of magnetron sputter coating of microspheres, including substrate requirements, the sticking of microspheres during coating (preventing a uniform coating), and the difficulties in growing the desired dense, smooth, uniform microstructure on continuously moving spherical substrates. (ERA citation 05:037768)

UCRL-84478 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Recent Advances in Pt Coating of Microspheres by a Batch Magnetron Sputtering Process.
E. J. Hsieh, and S. F. Meyer. 29 Aug 80, 17p CONF-801037-19
Contract W-7405-ENG-48
American Vacuum Society conference, Detroit, MI, USA, 13 Oct 1980.

Some proposed inertial confinement fusion targets require high-Z, high density metal coatings on glass microspheres. Platinum, which satisfies the high-Z and density requirements, can be coated onto microspheres with a batch magnetron sputtering process incorporating oxygen as a dopant gas to prevent the microspheres from sticking. This paper outlines recent progress in three areas: First, the coating process has been improved; second, the oxygen content and resistivity of the oxygen doped platinum films are analyzed; and third, the roles oxygen may play in reducing microsphere sticking during sputtering are discussed in regard to cold welding, Van der Waals bonding, electrostatic sticking, and sintering. (ERA citation 05:037770)

UCRL-84888 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Negative Deuterium Ions for Tandem Mirror Next Step and Tandem Mirror Reactors.
G. W. Hamilton. 25 Sep 80, 9p CONF-801068-2
Contract W-7405-ENG-48
International symposium on the production and neutralization of negative hydrogen ions and beams, Upton, NY, USA, 6 Oct 1980.

Recent designs for mirror fusion reactors with good power balance include ambipolar potential plugs to reduce end losses and thermal barriers to maintain a difference in electron temperature between the large-volume central cell plasma and the confining end plugs. These designs led to several new requirements for D exp 0 neutral beams derived from negative ions at energies of 150 to 200 keV and possibly higher. Such beams are required for injection of fat ions into the plugs and the barrier and for charge-exchange pumping of thermal ions diffusing into the barrier. Negative ions are preferred for these purposes because of their relatively high efficiency of neutralization and their high purity of single-energy D exp - . Examples of injector designs for Tandem Mirror Next Step (TMNS) and Tandem Mirror Reactors (TMR) are presented. (ERA citation 05:039163)

UCRL-85002 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
MFTF-Progress and Promise.
K. I. Thomassen. 3 Oct 80, 4p CONF-801011-7
Contract W-7405-ENG-48
ANS topical meeting on the technology of controlled nuclear fusion, King of Prussia, PA, USA, 14 Oct 1980.

The Mirror Fusion Test Facility (MFTF) has been in construction at Lawrence Livermore National Laboratory (LLNL) for 3 years, and most of the major subsystems are nearing completion. Recently, the scope of this project was expanded to meet new objectives, principally to reach plasma conditions corresponding to energy break-even. To fulfill this promise, the single-cell minimum-B mirror configuration will be replaced with a tandem mirror configuration (MFTF-B). The facility must accordingly be expanded to accomodate the new geometry. This paper briefly discusses the status of the major MFTF subsystems and describes how most of the technological objectives of MFTF will be demonstrated before we install the additional systems necessary to make the tandem. It also summarizes the major features of the expanded facility. (ERA citation 05:039143)

WFPS-TME-78-100 PC **A03**/MF **A01**
Westinghouse Electric Corp., Pittsburgh, PA. Fusion Power Systems Dept.
Structural Evaluation of a DTHR Bundle Divertor Particle Collector.
T. V. Prevenslik. Sep 80, 36p
Contract AC02-77ET52043

The purpose of this report is to present a structural evaluation of the current bundle divertor particle collector BDPC design under a peak heat flux in relation to criteria that protect against coolant leakage into the plasma over replacement schedules planned during DTHR operation. In addition, an assessment of the BDPC structural integrity at higher heat fluxes is presented. Further, recommendations for modifications in the current BDPC design that would improve design reliability to be considered in future design studies are described. Finally, experimental test programs directed to establishing materials data necessary in providing greater confidence in subsequent structural evaluations of BDPC designs in relation to coolant leakage over planned replacement schedules are identified. (ERA citation 05:039189)

18B. Isotopes

BNL-28301 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
D. M. Moltz, J. Aysto, M. D. Cable, R. F. Parry, and P. E. Haustein. 1980, 11p CONF-800870-3
Contract AC02-76CH00016
10. international conference on electromagnetic isotope separators, Zinal, Switzerland, 31 Aug 1980.

General improvements to the on-line mass separator RAMA (Recoil Atom Mass Analyzer) have yielded a greater reliability and efficiency for some elements. A new utilitarian helium-jet chamber has been installed to facilitate quick target and degrader foil changes in addition to a new ion source holder. A higher efficiency hollow-cathode, cathode-extraction ion source, for lower melting point elements (< 1200 exp 0 C) has also been designed. Tests with the beta-delayed proton emitter exp 37 Ca showed a factor of five increase in yield over the old hollow-cathode, anode-extraction source. A differentially-pumped-tape drive system compatible with both gamma - gamma and beta - gamma experiments has been incorporated into the general detection system. All major operating parameters will soon be monitored by a complete stand-alone microprocessor system which will eventually be upgraded to a closed-loop control system. (ERA citation 06:000328)

CEA-R-5000 PC **A03**/MF **A01**
CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Dept. de Genie Isotopique.
Isotopic Exchange Reactions. Kinetics and Efficiency of the Reactors Using Them in Isotopic Separation.
J. Ravoire. Nov 79, 47p
In French.
U.S. Sales Only.

In the first part, some definitions and the thermodynamic and kinetic isotopic effect concepts are recalled. In the second part the kinetic laws are established, in homogeneous and heterogeneous medium (one component being on occasions present in both phases), without and with isotopic effects. Emphasis is put on application to separation of isotopes, the separation factor alpha being close to 1, one isotope being in large excess with respect to the other one. Isotopic transfer is then given by: J = Ka (x - y/ alpha) where x and y are the (isotopic) mole fractions in both phases, Ka may be either the rate of exchange or a transfer coefficient which can be considered as the 'same in both ways' if alpha -1 is small compared to the relative error on the measure of Ka. The third part is devoted to isotopic exchange reactors. Relationships between their efficiency and kinetics are established in some simple cases: plug cocurrent flow reactors, perfectly mixed reactors, countercurrent reactors without axial mixing. We treat only cases where alpha and the up flow to down flow ratio is close to 1 so that Murphee efficiency approximately overall efficiency (discrete stage contactors). HTU (phase 1) approximately HTU (phase 2) approximately HETP (columns). In a fourth part, an expression of the isotopic separative power of reactors is proposed and discussed. (Atomindex citation 11:524745)

CONF-800814-22(Dr) PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
J. E. Bigelow, B. L. Corbett, L. J. King, S. C. McGuire, and T. M. Sims. 1980, 32p
Contract W-7405-ENG-26
180. American Chemical Society meeting/2. chemical congress of the North American Continent, San Francisco, CA, USA, 24 Aug 1980.

The techniques described have been demonstrated to be adequate to predict the contents of transplutonium element production targets which have been irradiated in the HFIR. The deviations, at least for isotopes of mass 253 or less, are generally within the usual analytical uncertainties, or else are for isiotopes which are of little overall import to the program. Work is especially needed to get a better picture of the production of exp 250 Cm, exp 254 Es, exp 255 Es, and ultimately exp 257 Fm, since researchers are frequently stating their interest in obtaining larger quantities of these rare and difficult-to-produce nuclides. (ERA citation 05:038177)

CONF-800870-1 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Helium-Jet Coupled Mass Separator: Advances and Directions.
D. M. Moltz. 1980, 9p
Contract W-7405-ENG-26
10. international conference on electromagnetic isotope separators, Zinal, Switzerland, 31 Aug 1980.

Results from the RAMA-88 system at the Lawrence Berkeley Laboratory are being used to design a new helium-jet and ion source system for the UNISOR project. This system should complement the existing integrated target-ion source to extend UNISOR's capabilities to include a majority of the chemical elements. This fast transport helium-jet system should permit studies of nuclides with half-lives down to 50 ms. (ERA citation 05:037774)

ENICO-1061 PC **A03**/MF **A01**
Exxon Nuclear Idaho Co., Inc., Idaho Falls.
Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
A. L. Erikson, R. L. Tromp, W. J. Maeck, and W. A. Emel. Oct 80, 48p
Contract AC07-79ID01675

An analytical program to determine absolute fast reactor fission yields for exp 233 U, exp 235 U, exp 238 U, exp 237 Np, exp 239 Pu, exp 240 Pu, exp 241 Pu and exp 242 Pu has been completed. Details of sample preparation, dissolution and separation for analysis by isotope dilution mass spectrometry are described. (ERA citation 06:001124)

JAERI-M-8450 PC **A03**/MF **A01**
Japan Atomic Energy Research Inst., Tokyo.
Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
H. Baba, T. Suzuki, Y. Nakahara, H. Yagi, and S. Okazaki. Sep 79, 44p

U.S. Sales Only.

Gamma-ray spectra were taken by measuring plates of plutonium metal in suppression of the intense low-energy radiation from exp 241 Am with lead absorber. Twelve complex peak multiplets, each consisting of gamma rays from more than one nuclide, were selected from the resulting spectrum in the energy region covering from 200 to 800 keV to determine relative abundances of plutonium isotopes of the mass number from 238 to 241 besides exp 241 Am etc. Each peak multiplet was unfolded by the usual linear least squares method on the basis of the normalized response profile of each existing nuclide generated with symmetric or asymmetric Gaussians of given energies and relative intensities. The width of Gaussian and the conversion from energy to channel number were self-determined by the non-linear function minimization method. First, the relative abundance of exp 241 Am with respect to the content of exp 239 Pu was obtained by the use of the unfolding results of three particular peak multiplets. Then, contents of the other nuclides relative to the content of exp 239 Pu were determined with fixing the abundance ratio between exp 241 Am and exp 239 Pu to the obtained value in analysis of the remaining multiplets. Finally, the effective detection efficiency curve was constructed with eleven out of the twelve values of exp 239 Pu abundance plus the peak intensity of one single peak of exp 239 Pu. The efficiency curve can be used to re-evaluate relative contents of the nuclides observed above. Reliability of the present method shall be discussed with regard to the isotopic grade of plutonium samples and interference due to the existence of fission product nuclides. (Atomindex citation 11:524607)

18C. Nuclear Explosions

AD-A091 908/4 PC **A04**/MF **A01**
Harry Diamond Labs., Adelphi, MD.
A Near-Surface Burst EMP Driver Package for Neutron-Induced Sources.
Technical rept.,
William T. Wyatt, Jr. Sep 80, 52p Rept no. HDL-TR-1930

This report describes the development of a software package developed for the NEMP computer code, specifying time- and space-dependent drivers produced by neutrons emitted from a near-surface nuclear detonation in the air. Well-chosen functionals were fitted to previously obtained Monte Carlo transport results. The fit was done globally to all volume detectors and time bins together for each driver. Highly efficient minimization algorithms were employed to obtain each fit. Separate drivers for radial and theta Compton currents and for ionization rate were determined for nine source neutron energy bands, for five classes of neutron interaction including (1) neutron direct ionization by elastic recoil and charged particle production, and secondary gamma production by (2) high energy air reactions, (3) low energy air reactions, (4) high energy ground reactions, and (5) low energy ground reactions. Burst height dependence of the drivers was determined. Comparisons with experiment and previous theory are briefly discussed. Typical driver results are presented and discussed. The package allows flexible representation of any nuclear weapon neutron energy spectrum and choice of any burst height in the near-surface regime. (Author)

AD-A091 939/9 PC **A02**/MF **A01**
Harry Diamond Labs., Adelphi, MD.
NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
Special rept.,
Ralph G. Moore. Aug 80, 24p Rept no. HDL-SR-80-1

This report serves as a user's manual primarily for the analyst or the programmer interested in installing and using the Nuclear Damage Assessment Computer Code (NUDACC). Toward this interest, detailed descriptions of file structure, mass storage requirements, and logic flow are provided. Additionally, a full description of the NUDACC methodology is presented along with an example of vulnerability array modification. (Author)

AD-A092 143/7 PC **A04**/MF **A01**
Kaman AviDyne, Burlington, MA.
FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
Final rept. 1 Aug 78-31 Jan 79,
Robert F. Smiley, J. Ray Ruetenik, and Michael A. Tomayko. 31 Jan 79, 58p KA-TR-158, DNA-4825F
Contract DNA001-78-C-0374

The FAB hydrodynamic computer code was developed for computing the blast flow characteristics of a nuclear free-air blast wave. The flow field is represented by a multi-cell moving grid with fluid properties calculated by Godunov's method. The shock wave at the blast front is represented by the Hugoniot relation. Real air properties may be represented by either Brode (1965) or Doan-Nickel equations of state. Thermal radiation is taken into account. Calculation results are presented and compared with nuclear test data summaries and with other predictions. Predicted FAB shock front overpressures below 10 psi are generally near to or between the extremes of the nuclear test data summaries in DASA 1200 as obtained from ground-based and airborne measurements. (Author)

AD-A092 214/6 PC **A05**/MF **A01**
Systems, Science and Software, La Jolla, CA.
Late Time Containment.
Final rept. 1 Jan-31 Dec 79,
R. E. Duff, and J. R. Barthel. 18 Apr 80, 95p SSS-R-80-4425, DNA-5293F
Contract DNA001-79-C-0099

Major contributions in the Late Time Containment research effort are summarized. Test design activity showed that cavity venting into a tunnel could effectively lower cavity pressure on a fast time scale and that a reasonable, fast-turn-around horizontal line of sight system could be developed for satellite testing. Analysis of past experience has led to a containment summary report for Mighty Epic and much of the data for a Diablo Hawk report. A study of cavity pressure measurements confirms that complex processes are involved probably including some form of cavity gas leakage at late time. LOS flow modeling and calculations based on new techniques are in reasonable agreement with the limited data available. Flow calculations of PI test configurations probably indicate that the neglect of the pipe wall in the calculations was detrimental. An analysis of grout sphere experiments by SRII shows that strong evidence for rapid stress relaxation exists in the data. Finally, several miscellaneous activities are detailed. (Author)

AD-B951 703/8 PC **A03**/MF **A01**
General Electric Co., Santa Barbara, CA. TEMPO.
Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
Francis K. Kawahara, Leland R. Bunney, Edward C. Freiling, and Glenn R. Crocker. 1 Feb 80, 42p USNRDL-TR-67-90(EX)
Contract DNA001-79-C-0455
Extracted version frcm AD-820 627L.
Distribution limitation now removed.

No abstract available.

AD-B951 735/0 PC **A06**/MF **A01**
General Electric Co., Santa Barbara, CA. TEMPO.
Operation GREENHOUSE. Scientific Director's Report. Annex 3.0. The Test of Structures.
1 Feb 80, 120p DOE-WT-117(EX)
Contract DNA001-79-C-0455
Extracted version of report dates Aug 51, AD-358 164L.
Distribution limitation now removed.

No abstract available.

AD-B951 742/6 PC **A02**/MF **A01**
General Electric Co., Santa Barbara, CA. TEMPO.
Operation PLUMBBOB. Project 41.3. Effects of Altitude on Neutron Measurements.
Rept. for May-Oct 57,
C. R. Mehl. 1 Oct 79, 13p DOE-WT-1521(EX)
Contract DNA001-79-C-0455
Extracted version of report dated 20 Nov 59. Prepared in cooperation with Sandia Corp., Albuquerque, NM.
Distribution limitation now removed.

It is demonstrated that high- and intermediate-energy neutron flux increases with altitude above ground, and that low-energy flux decreases with increasing altitude above ground.

SAND-80-0445 PC **A02**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Performance Estimates for Personnel Access Control Systems.
R. G. Bradley. Oct 80, 20p
Contract AC04-76DP00789

Current performance estimates for personnel access control systems use estimates of Type I and Type II verification errors. A system performance equation which addresses normal operation, the insider, and outside adversary attack is developed. Examination of this equation reveals the inadequacy of classical Type I and II error evaluations which require detailed knowledge of the adversary threat scenario for each specific installation. Consequently, new performance measures which are consistent with the performance equation and independent of the threat are developed as an aid in selecting personnel access control systems. (ERA citation 05:037752)

SAND-80-1944C PC **A02**/MF **A01**
Sandia National Labs., Albuquerque, NM.
STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
F. A. Ross, L. O'Connell, and R. Trellue. 1980, 4p CONF-801027-2, CONF-801121-2
Contract AC04-76DP00789
Biennial cube symposium, Livermore, CA, USA, 22 Oct 1980.

A Stand Alone Test System, called STATS, was developd to acquire and analyze data from as many as 120 analog channels. STATS is used in testing weapon systems under simulated environments at a laboratory in Texas. Some analog channels are sampled every 10 microseconds, but most are digitized every 100 microseconds. STATS features hardware data compression and a first-in-first-out buffer for each channel. It has also provided a way for the test configuration to be controlled by the diskette files that contain the test specifications. The analysis specifications are also predefined in diskette files keyed to the particular test type. The techniques used are applicable when many channels must be monitored simultaneously, channel activity comes in spurts separated by long quiet periods, and more than a few channels experience nearly simultaneous bursts of activity. (ERA citation 06:001295)

18D. Nuclear Instrumentation

AD-A092 235/1 PC **A02**/MF **A01**
Army Test and Evaluation Command, Aberdeen Proving Ground, MD.
Ratemeter Directional Dependence, Radiac.
Final rept. on test operations procedure.
19 Nov 80, 8p Rept no. TOP-6-2-562

This test operations procedure provides a standard method for performing radiac ratemeter directional dependence tests to determine the ratemeter response to radiation emanating from different directions relative to the test item.

AD-A092 271/6 PC **A02**/MF **A01**
Army Test and Evaluation Command, Aberdeen Proving Ground, MD.
Radiac Ratemeter Calibration Accuracy.
Final rept. on test operations procedure.
29 Oct 80, 10p Rept no. TOP-6-2-551
See also Rept. no. MTP-6-3-335, AD-720 567.

This is a procedure to standardize methods of determining the calibration accuracy of ratemeters over the range of 80 KEV to 3 MEV. It is to be conducted within a secure enclosure or building where

radiation is reduced to a rate less than 2 milliroentgens per hour. Calibration is scored against US Army secondary standards. The procedure is used for/with tactical ratemeters. (Author)

COO-3539-13 PC **A02**/MF **A01**
Temple Univ., Philadelphia, PA. Dept. of Physics.
Technique for Adaptive Data Analysis.
W. K. McFarlane. 1978, 20p
Contract AS02-76ER03539

An adaptive technique is presented for analyzing time-ordered data sequences where calibrations change systematically during data collection. Running averages of selected data items are maintained during analysis, and are used to modify calibration constants. Results can thus be compensated for drifts and for step-function changes. A learning process is used to establish initial values of running averages. 4 figures. (ERA citation 06:001273)

DOE/ER/14529-1 PC **A02**/MF **A01**
Michigan State Univ., East Lansing. Dept. of Physics.
Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters.
J. Hylen, Z. M. Ma, A. Jawahery, T. Maruyama, and R. Milburn. 24 May 80, 25p
Contract AS02-77ER14529

Two large aperture, 10 cell atmospheric-pressure isobutane Cherenkov counters were designed and constructed for a SLAC streamer chamber experiment. The rejection efficiencies for a 9 GeV/c pi exp - were measured to be 99.838 +- .006% and 99.717 +- 008% for the two counters. The design details and performance characteristics are discussed. (ERA citation 05:038629)

LBL-10768 PC **A05**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Residential Radon Daughter Monitor Based on alpha Spectroscopy.
W. W. Nazaroff. May 80, 100p
Contract W-7405-ENG-48

The radioactive daughters of radon-222 pose a serious indoor air quality problem in some circumstances. A technique for measuring the concentrations of these radioisotopes in air is presented. The method involves drawing air through a filter; then, for two time intervals after sampling, counting the alpha decays from polonium-218 and polonium-214 on the filter. The time intervals are optimized to yield the maximum resolution between the individual daughter concentrations. For a total measurement time of 50 minutes, individual daughter concentrations of 1.0 nanocuries per cubic meter are measured with an uncertainty of 20%. A prototype of a field monitor based on this technique is described, as is a field test in which the prototype was used to measure radon daughter concentrations as a function of ventilation conditions in an energy-efficient house. (ERA citation 06:001327)

18E. Nuclear Power Plants

NUREG/CR-1761 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
W. H. Sides, Jr., C. B. Oh, and P. F. Knight. Nov 80, 31p ORNL/NUREG/TM-396
Contract W-7405-eng-26

A program to enhance the capabilities of operators of nuclear power plants is being pursued by the U.S. Nuclear Regulatory Commission (NRC). The program includes improvements in plant monitoring, diagnostic and corrective action aids, operator-process communication, and operator training. Concerning diagnostic aids, a disturbance analysis and surveillance system (DASS) was considered which would monitor the plant for the approach or occurrence of disturbance conditions and would assist the operator in returning the plant to normal operation or to help mitigate the consequences of a failure condition or misoperation. (A disturbance condition is defined as a condition in which a physical parameter, component, system, or some other element of the plant is outside of or approaching the tolerance limits for a particular mode of operation.) The NRC had requested Oak Ridge National Laboratory to survey the functional requirements being proposed for a DASS. In fulfilling this task, the proposed requirements were categorized according to whether they could be realized in the short term and backfitted to existing plants or whether they could be realized only in the long term by incorporation into new plant designs. In addition, several recommendations concerning DASS development were made for consideration by the NRC. Finally, the effects of human factors on a DASS were evaluated, and the results are discussed in this report.

NUREG/CR-1819 PC **A07**/MF **A01**
Rensselaer Polytechnic Inst., Troy, NY. Dept. of Nuclear Engineering.
Development and Testing of a Model for Fire Potential in Nuclear Power Plants.
Final rept. 1 Mar 78-31 May 79,
R. W. Hockenbury, and M. L. Yeater. Nov 80, 133p
Sponsored in part by Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Regulatory Research.

Approximately 235 Fire Events have been examined, classified and analyzed for various probability factors related to fires in nuclear facilities. The fire incident data bank is computerized, thus making the information readily accessible for simple sorting. The observed fire events have been used to aid in the construction of preliminary models for estimating the risk due to fires in nuclear power plants. Various aspects of the models are presented, including features to incorporate in second-phase modeling efforts.

UCB/EERC-80/21 PC **A05**/MF **A01**
California Univ., Berkeley. Coll. of Engineering.
Development and Testing of Restraints for Nuclear Piping Systems.
J. M. Kelly, and M. S. Skinner. Jun 80, 78p
Contract AT03-76ER70296

As an alternative to current practice of pipe restraint within nuclear power plants it has been proposed to adopt restraints capable of dissipating energy in the piping system. The specific mode of energy dissipation focused upon in these studies is the plastic yielding of steels utilizing relative movement between the pipe and the base of the restraint, a general mechanism which has been proven as reliable in several allied studies. This report discusses the testing of examples of two energy-absorbing devices, the results of this testing and the conclusions drawn. This study concentrated on the specific relevant performance characteristics of hysteretic behavior and degradation with use. The testing consisted of repetitive continuous loadings well into the plastic ranges of the devices in a sinusoidal or random displacement controlled mode. (ERA citation 05:038157)

UCID-18676 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Technical Evaluation of the Proposed Technical Specification Change for the Arkansas Nuclear Power Station, Unit 2.
R. A. Victor. Aug 80, 16p
Contract W-7405-ENG-48

This report documents the technical evaluation of the request for changes in the Technical Specifications for the Arkansas Nuclear Power Station, Unit 2. These changes were proposed by the licensee in a letter dated November 27, 1979. The basis for review included a report entitled Determination of Plant System Trip Setpoints Valves. The requested changes to the Technical Specifications were found to be acceptable based on information submitted by the licensee. (ERA citation 05:038122)

18F. Radiation Shielding and Protection

CONF-800942-4 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Analysis of the New GCFR Upper and Lower Plenum Flow-Through Shields.
S. N. Cramer, D. A. Reed, M. B. Emmett, and C. A. Rouse. 10p
Contract W-7405-ENG-26
ANS topical meeting on 1980 advances in reactor physics and shielding, Sun Valley, ID, USA, 14 Sep 1980.

Analysis of the proposed GCFR upper and lower plenum flow-through shields has been performed using both discrete ordinate (DOT) and Monte Carlo (MORSE) methods. Several shields having one change of direction in the coolant path (chevron) and two changes of direction (herringbone) were investigated. The shields were modeled as unit cells with periodic boundary conditions. From plenum fluence calculations and design constraints at the reactor vessel liner, it was determined that all the shield configurations analyzed should be adequate for the necessary radiation attenuation. (ERA citation 05:038144)

CONF-800971-1 PC **A04**/MF **A01**
Idaho National Engineering Lab., Idaho Falls.
Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
P. E. MacDonald, S. L. Seiffert, Z. R. Martinson, R. K. McCardell, and D. E. Owen. 1980, 60p
Contract AC07-76ID01570
CNSI specialist meeting on safety aspects of fuel behavior in off-normal and accident conditions, Helsinki, Finland, 1 Sep 1980.

This paper presents an assessment of LWR fuel damage during a reactivity initiated accident and comments on the adequacy of the present USNRC design requirements. Results from early SPERT tests are reviewed and compared with results from recent computer simulations and PBF tests. A progression of fuel rod and cladding damage events is presented. High strain rate deformation of relatively cool irradiated cladding early in the transient may result in fracture at a radial average peak fuel enthalpy of approximately 140 cal/g UO sub 2 . Volume expansion of previously irradiated fuel upon melting may cause deformation and rupture of the cladding, and coolant channel blockage at higher peak enthalpies. (ERA citation 05:038184)

INDC(IND)-25/GV PC **A03**/MF **A01**
International Atomic Energy Agency, Vienna (Austria). International Nuclear Data Committee.
ENDF/B Based 27-Group Cross-Sections for Some Rare-Earth and Concrete Elements.
S. B. Garg. Oct 79, 32p BARC-1000
U.S. Sales Only.

27-group cross-sections have been generated for some rare-earth and concrete elements using their basic cross-sections from the ENDF/B library. The rare-earth elements are exp 149 Sm, Gd, exp 151 Eu and exp 153 Eu and the concrete-elements are Mg, Al, Si, K and Ca. Concrete mixed with the rare-earth elements can act as an effective neutron shield in nuclear reactors. This cross-section set will serve as a useful tool in carrying out such safety and shielding studies. (Atomindex citation 11:516104)

KY-697 PC **A04**/MF **A01**
Paducah Gaseous Diffusion Plant, KY.
License Application for Type 48HX Cylinder for Shipment of Natural Assay UF sub 6.
S. C. Blue, T. R. Odom, and D. H. Stitt. 26 Feb 79, 51p
Contract W-7405-ENG-26

Sudden unpredicted changes in the operating plan of the Gaseous Diffusion Plants precipitated a requirement for additional 14-ton cylinders for shipment of nonenriched UF sub 6 . The large quantity of A-516 steel normally specified for these cylinders was unavailable in the required time so ASTM A-285 Grade C was specified for the shell. This report provides documentation of tests and evaluations done to assure compliance of the cylinder fabricated from the new material to 10 CFR 71. (ERA citation 05:038534)

LA-UR-80-2702 PC **A02**/MF **A01**
Los Alamos Scientific Lab., NM.
Systematics of S- and P-Wave Radiation Widths.
M. S. Moore. 11p CONF-800979-5
Contract W-7405-ENG-36
Workshop on nuclear data evaluation methods and procedures, Upton, NY, USA, 22 Sep 1980.

The question of calculating differences in s- and p-wave radiation widths as a valid evaluation tool is explored. A purely statistical approach such as that provided by the Brink-Axel formula depends upon two factors: 1) an adequate description of the giant dipole resonance shape at energies well below the resonance, and 2) an adequate description of the level densities between the ground state and the excitation of the compound nucleus near the neutron separation energy. Some success has been obtained in certain regions of the periodic table with this simple approach, e.g., in the actinides where all nuclei exhibit similar rigid permanent deformations. However, if the method is to be used as a general evaluation procedure throughout the periodic table and particularly in regions where the radiative transition probabilities are enhanced by direct processes, it appears that much more nuclear structure information needs to be incorporated into the calculations. (ERA citation 06:001625)

LA-UR-80-2707 PC **A03**/MF **A01**
Los Alamos Scientific Lab., NM.
Prompt Fission Neutron Spectra and Anti nu p.
D. G. Madland. 26p CONF-800979-6
Contract W-7405-ENG-36
Workshop on nuclear data evaluation methods and procedures, Upton, NY, USA, 22 Sep 1980.

Methods used to obtain the evaluated prompt fisson neutron spectrum N(E) and the average prompt neutron multiplicity anti nu /sub p/ are reviewed. The relative influence of experimental data; interpolated, extrapolated, and fitted experimental data; systematics; and nuclear theory are considered for the cases where (a) abundant experimental data exist, (b) some experimental data exist, and (c) no experimental data exist. The Maxwellian and Watt distributions, and the determination of the parameters of these distributions by data fitting, are described and compared to recent new theoretical work on the calculation of N(E). Similarly, various expressions for anti gamma /sub p/ that have been obtained by data fitting and systematics are described and compared to recent new theoretical work. Complications in the evaluation of N(E) and anti gamma /sub p/ due to the onset of multiple-chance fission and the interrelationships between N(E), anti gamma delta /sub p/ and the multiple-chance fission cross section are discussed using the example of the fission of exp 235 U. Some statistics and comments are given on the evaluations of N(E) and anti gamma /sub p/ contained in ENDF/B-V, and a number of concluding recommendations are made for future evaluation work. (ERA citation 06:001626)

18G. Radioactive Wastes and Fission Products

BNL-28193 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Keynote Address at the International Conference on Nuclear Waste Transmutation.
M. Steinberg. Jul 80, 13p CONF-800743-13
Contract AC02-76CH00016
International conference on nuclear waste transmutation, Austin, TX, USA, 22 Jul 1980.

Most of the US research effort on radioactive waste management is concentrated on its solidification and storage in geologic formations. Transmutation is an alternative. It can be applied to weapons plutonium as well to spent fuel. (ERA citation 05:037711)

CONF-800607-87(Dr) PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
R. A. Lorenz, J. L. Collins, M. F. Osborne, and A. P. Malinauskas. 1980, 7p
Contract W-7405-ENG-26
American Nuclear Society annual meeting, Las Vegas, NV, USA, 8 Jun 1980.

Fission product release tests were performed with light water reactor (LWR) fuel rod segments containing large amounts of cesium and iodine in the pellet-to-cladding gap space in order to check the validity of the previously published Source Term Model for this type of fuel. The model describes the release of fission product cesium and iodine from LWR fuel rods for controlled loss-of-coolant accident (LOCA) transients in the temperature range 500 to 1200 exp 0 C. The basis for the model was test data obtained with simulated fuel rods and commercial fuel irradiated to high burnup but containing relatively small amounts of cesium and iodine in the pellet-to-cladding gap space. (ERA citation 05:038181)

CONF-800987-1 PC **A02**/MF **A01**
Exxon Nuclear Idaho Co., Inc., Idaho Falls.
Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
B. A. Staples, B. E. Paige, D. W. Rhodes, and M. W. Wilding. 1980, 18p
Contract AC07-79ID01675
Workshop on comparative leaching behavior of radioactive waste forms, Argonne, IL, USA, 3 Sep 1980.

No significant chemical differences were determined between retrieved and fresh calcine based on chemical and spectrochemical analyses. Little can be derived from the amounts of the radioisotopes present in the retrieved calcine samples other than the ratios of strontium-90 to cesium-137 are typical of aged fission product. The variations in concentrations of radionuclides within the composite samples of each bin also reflect the differences in compositions of waste solutions calcined. In general the leaching characteristics of both calcines by distilled water are similar. In both materials the radionuclides of cesium and strontium were selectively leached at significant rates, although cesium leached much more completely from the alumina calcine than from the zirconia calcine. Cesium and strontium are probably contained in both calcines as nitrate salts and also as fluoride salts in zirconia calcine, all of which are at least slightly soluble in water. Radionuclides of cerium, ruthenium, and plutonium in both calcines were highly resistant to leaching and leached at rates similar to or less than those of the matrix elements. These elements exist as polyvalent metal ions in the waste solutions before calcination and they probably form insoluble oxides and fluorides in the calcine. The relatively slow leaching of nitrate ion from zirconia calcine and radiocesium from both calcines suggests that the calcine matrix in some manner prevents complete or immediate contact of the soluble ions with water. Whether radiostrontium forms slightly fluoride salts or forms nitrate salts which are protected in the same manner as radiocesium is unknown. Nevertheless, selective leaching of cesium and strontim is retarded in some manner by the calcine matrix. (ERA citation 05:037725)

CONF-801038-4 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
S. J. Rimshaw, and F. N. Case. 1980, 28p
Contract W-7405-ENG-26
16. DOE nuclear air cleaning conference, San Diego, CA, USA, 20 Oct 1980.

Various high-level nitrate wastes were subjected to formic acid denitration. Formic acid reacts with the nitrate anion to yield noncondensable, inert gases according to the following equation: 4 HCOOH + 2 HNO sub 3 implies N sub 2 O + 4 CO sub 2 + 5 H sub 2 O. These gases can be scrubbed free of exp 106 Ru, exp 131 I, and exp 99 Tc radioactivities prior to elimination from the plant by passage through HEPA filters. The formation of deleterious NO/sub x/ is avoided. Moreover, formic acid reduces ruthenium to a lower valence state with a sharp reduction in RuO sub 4 volatility during subsequent calcination of the pretreated waste. It is shown that a minimum of 3% of RuO sub 4 in an off-gas stream reacts with Davison silica gel (Grade 40) to give a fine RuO sub 2 aerosol having a particle size of 0.5 mu . This RuO sub 2 aerosol passes through water or weak acid scrub solutions but is trapped by a caustic scrub solution. Iodine volatilizes almost completely on calcining an acidic waste, and the iodine volatility increases with increasing calcination temperature. On calcining an alkaline sodium nitrate waste the iodine volatility is about an order of magnitude lower, with a relatively low iodine volatility of 0.39% at a calcination temperature of 250 exp 0 C and a moderate volatility of 9.5% at 600 exp 0 C. Volatilities of exp 99 Tc were generally <1% on calcining acidic or basic wastes at temperatures of 250 to 600 exp 0 C. Data are presented to indicate that exp 99 Tc concentrates in the alkaline sodium nitrate supernatant waste, with approx. 10 mg exp 99 Tc being associated with each curie of exp 137 Cs present in the waste. It is shown that lutidine (2,4 dimethyl-pyridine) extracts Tc(VII) quantitatively from alkaline supernatant wastes. The distribution coefficient (K/sub D/) for Tc(VII) going into the organic phase in the above system is 102 for a simulated West Valley waste and 191 for a simulated Savannah River Plant (SRP) waste. (ERA citation 05:037714)

DOE/EDP-0063 PC **A06**/MF **A01**
Department of Energy, Washington, DC.
Environmental Development Plan. LWR Commercial Waste Management.
Aug 80, 123p

This Environmental Development Plan (EDP) identifies the planning and managerial requirements and schedules needed to evaluate and assess the environmental, health and safety (EH and S) aspects of the Commercial Waste Management Program (CWM). Environment is defined in its broadest sense to include environmental, health (occupational and public), safety, socioeconomic, legal and institutional aspects. This plan addresses certain present and potential Federal responsibilities for the storage, treatment, transfer and disposal of radioactive waste materials produced by the nuclear power industry. The handling and disposal of LWR spent fuel and processed high-level waste (in the event reprocessing occurs) are included in this plan. Defense waste management activities, which are addressed in detail in a separate EDP, are considered only to the extent that such activities are common to the commercial waste management program. This EDP addresses three principal elements associated with the disposal of radioactive waste materials from the commercial nuclear power industry, namely Terminal Isolation Research and Development, Spent Fuel Storage and Waste Treatment Technology. The major specific concerns and requirements addressed are assurance that (1) radioactivity will be contained during waste transport, interim storage or while the waste is considered as retrievable from a repository facility, (2) the interim storage facilities will adequately isolate the radioactive material from the biosphere, (3) the terminal isolation facility will isolate the wastes from the biosphere over a time period allowing the radioactivity to decay to innocuous levels, (4) the terminal isolation mode for the waste will abbreviate the need for surveillance and institutional control by future generations, and (5) the public will accept the basic waste management strategy and geographical sites when needed. (ERA citation 05:037726)

DP-MS-80-50 PC **A02**/MF **A01**
Du Pont de Nemours (E.I.) and Co., Aiken, SC. Savannah River Lab.
Effects of Processing Variables on the Product Quality of Large-Scale Glass Forms Containing Simulated SRP Waste.
M. J. Plodinec. 1980, 15p CONF-801034-2
Contract AC09-76SR00001
33. ACS Pacific Coast meeting, San Francisco, CA, USA, 28 Oct 1980.

The reference process for disposal of radioactive waste from the Savannah River Plant is immobilization in borosilicate glass. Full-scale canisters containing simulated waste have been made by two processes: in-can melting and continuous joule-heated melting. For each process, melter atmosphere and the degree of feed mixing have been varied. The effects of these variations on glass quality parameters such as leach rate, degree of fracture and porosity, and amount of crystalline material are discussed. (ERA citation 05:037716)

EGG-FM-5241 PC **A07**/MF **A01**
Idaho National Engineering Lab., Idaho Falls.
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
J. E. Flinn, P. V. Kelsey, Jr., R. L. Tallman, S. P. Henslee, and W. C. Seymour. Apr 80, 136p
Contract AC07-76ID01570

Seven castings, 90 kg each, were produced by an electromelt process. The melts were solidified in thin-walled mild or galvanized steel containers. The containers showed no evidence of interaction with the slag. Four of the castings, designated as A-series (average INEL transuranic (TRU)/low-level-waste composition plus soil additions), were subjected to more detailed examinations, including sectioning into half pairs and subsequent evaluation. Examinations showed that bulk defects in castings were crust formation, center cavity porosity, and minor cracking. Specimens removed from the castings at selected locations showed that density and chemical composition were relatively uniform within each casting. Casting microstructure showed a 75 to 90% devitrification. Crystalline-phase types were pyroxene (diopside and hedenbergite) and spinel. The amount of spinel in A-series castings was dependent on both the iron content and Fe exp 2+ /Fe exp 3+ ratio. Leach data on slag specimens showed comparable leach rates, based on weight-loss measurements and elemental analyses of spent leachants. Splitting tensile strengths and fracture toughness values from slag specimens used in this study are less than those measured for borosilicate glass. (ERA citation 05:037717)

ENICO-1043 PC **A04**/MF **A01**
Exxon Nuclear Idaho Co., Inc., Idaho Falls.
Calcination of Sodium-Bearing Waste Using Non-Radioactive Additives.
B. J. Newby. Oct 80, 69p
Contract AC07-79ID01675

Methods were scoped for converting the sodium-bearing waste stored at the Idaho Chemical Processing Plant into granular, free flowing solids by fluidized-bed calcination at 500 exp 0 C. The most promising methods were addition of aluminum nitrate or aluminum nitrate, hydrofluoric acid, and calcium nitrate to sodium-bearing waste prior to calcination. These will be used as alternates to a method consisting of adding calcium nitrate to a blend of zirconium fluoride and sodium-bearing wastes prior to calcination. Problems could develop in calcining such a blend, storing the resulting calcine, or in obtaining enough zirconium fluoride waste to blend with sodium-bearing waste. (ERA citation 06:000280)

ENICO-1044 PC **A03**/MF **A01**
Exxon Nuclear Idaho Co., Inc., Idaho Falls.
Inventory of Calcined Waste Stored at the ICPP as of September 1979.
R. A. Kirkbride. Sep 80, 46p
Contract AC07-79ID01675

An option in the program for Long-Term Management of High-Level Idaho Chemical Processing Plant (ICPP) Wastes calls for retrieving calcined waste stored at ICPP and converting it to a more stable, less dispersible form. Waste solidification options include vitrification, pelletization, or conversion to a ceramic form. A calcine inventory, from December 1963 to September 1979, has been prepared based on calciner run and solids storage facilities information which gives the range of chemical compositions of calcined waste stored at ICPP. Information researched includes calciner startup data, waste solution types and volumes calcined, calciner operating schedules, solids storage bin capacities, calcine storage bin distributor systems and solids storage bin thermocouple locations and temperature records. A recommendation for improving calcine inventory control is given. (ERA citation 06:000291)

ENICO-1060 PC **A03**/MF **A01**
Exxon Nuclear Idaho Co., Inc., Idaho Falls.
Storage and Retrievability of Existing and Future ICPP Calcines.
D. A. Cresap. Oct 80, 38p
Contract AC07-79ID01675

Calcine caking and retrievability tests were conducted to ensure that calcine stored at ICPP is retrievable by conventional vacuum methods. This report describes results of shearing strength (Jenike and Johanson) tests and retrieval tests on zirconia and zirconium-sodium blended calcines. Results of Jenike tests on calcine containing phosphate and calcine containing candidate anti-caking additives are also given. All calcines tested were retrievable with standard vacuum methods and nozzle vibration at storage temperatures anticipated at ICPP. (ERA citation 05:037729)

HEDL-TME-79-20 PC **A06**/MF **A01**
Hanford Engineering Development Lab., Richland, WA.
Spent Fuel Data for Waste Storage Programs.
E. M. Greene. Sep 80, 102p
Contract AC14-76FF02170

Data on LWR spent fuel were compiled for dissemination to participants in DOE-sponsored waste storage programs. Included are mechanical descriptions of the existing major types of LWR fuel assemblies, spent LWR fuel fission product inventories and decay heat data, and inventories of LWR spent fuel currently in storage, with projections of future quantities. (ERA citation 05:037705)

JAERI-M-8158 PC **A02**/MF **A01**
Japan Atomic Energy Research Inst., Tokyo.
Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
T. Ohata, H. Matsui, M. Naritomi, and Y. Yoshida. Mar 79, 10p
In Japanese.
U.S. Sales Only.

In order to collect effectively airborne radioiodine of low concentration released to the atmosphere from nuclear facilities, the collection efficiency of active charcoals with three different grain sizes, impregnated with 5% TEDA was studied as a function of airbone methyl iodide concentration (bed depth 1 cm and face velocity 20 cm/sec). Following are the results: Collection efficiencies are nearly constant in the concentration range of 10 exp -8 to 10 exp -19 CH sub 3 I.g/cm exp 3 . Collection efficiency values are over 99% in 28 -- 60 mesh, 99% in 12 -- 30 mesh and 90% in 4 -- 10 mesh in the experimental conditions. (Atomindex citation 11:524738)

LA-8539-PR PC **A02**/MF **A01**
Los Alamos Scientific Lab., NM.
Fission Product Release. Progress Report, April 1-June 30, 1980.
A. E. Norris. Sep 80, 23p ONWI/Sub-80/E511-01200-7
Contract W-7405-ENG-36

The analysis of data collected from nuclear waste leaching experiments is under way to determine what differences are important when one spent fuel element wafer is leached under aqueous reducing conditions while the other is leached under oxidizing conditions. The concentrations of radioactive species in the leachant solutions are being investigated in terms of dissolution congruent with that of the UO sub 2 matrix and, for the lanthanide and actinide elements, in terms of precipitation reactions that result in limiting the concentrations of the species in solution. The concentrations of uranium and plutonium is solution under reducing conditions, however, are much higher than would be expected from the oxygen fugacity of the leachant derived from the measured Eh value. It is inferred that the actual reducing conditions in this pH 4 solution were much more oxidizing than desired for the experiment. The solubility of pure uraninite measured in deionized water was used in conjunction with thermodynamic calculations to infer that the oxygen fugacity in the apparatus, which differed from that used for the spentfuel leaching, was approx. 10 exp -50 bars and that CO sub 2 was either absent or present in such low concentrations that the UO sub 2 solubility was not appreciably affected. 14 figures. (ERA citation 06:000316)

NUREG/CR-1694 PC **A03**/MF **A01**
Brookhaven National Lab., Upton, NY.
Properties of Radioactive Wastes and Waste Containers.
Quarterly progress rept. Apr-Jun 80,
N. Morcos, A. J. Weiss, J. W. Adams, P. R. Hayde, and L. W. Milian. Nov 80, 45p BNL-NUREG-51266
Contract DE-AC02-76CH00016
See also NUREG/CR-1514.

A study was initiated to determine the effect of varying V/S (the ratio of the waste form volume to its surface area) on the leachability of radioisotopes incorportaed in cement forms. Cesium-137 and strontium-85 mixed with a simulated formulation of waste derived from forced recirculation evaporator bottoms of LWR's were solidified in portland II cement. The V/S ratios of the forms varied from 0.41 to 2.77. The resulting forms were leached using a modified IAEA procedure. Leaching data indicate an inverse relationship between the amount of leached radioactivity and V/S value. Experiments were undertaken to determine the degree of desorption of Cs-137 initially adsorbed on cation organic ion exchange resins upon mixing with cement paste and during the plastic phase of the curing process.

ORNL/EIS-156/V1 PC **A20**/MF **A01**
Oak Ridge National Lab., TN.
Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
L. K. Hyder, C. S. Fore, N. D. Vaughan, and R. A. Faust. Sep 80, 459p
Contract W-7405-ENG-26

This annotated bibliography of 705 references represents the first in a series to be published by the Ecological Sciences Information Center containing scientific, technical, economic, and regulatory information relevant to nuclear waste isolation. Most references discuss deep geologic disposal, with fewer studies of deep seabed disposal; space disposal is also included. The publication covers both domestic and foreign literature for the period 1954 to 1980. Major chapters selected are Chemical and Physical Aspects; Container Design and Performance; Disposal Site; Envirnmental Transport; General Studies and Reviews; Geology, Hydrology and Site Resources; Regulatory and Economic Aspects; Repository Design and Engineering; Transportation Technology; Waste Production; and Waste Treatment. Specialized data fields have been incorporated to improve the ease and accuracy of locating pertinent references. Specific radionuclides for which data are presented are listed in the Measured Radionuclides field, and specific parameters which affect the migration of these radionuclides are presented in the Measured Parameters field. The references within each chapter are arranged alphabetically by leading author, corporate affiliation, or title of the document. When the author is not given, the corporate affiliation appears first. If these two levels of authorship are not given, the title of the document is used as the identifying level. Indexes are provided for author(s), keywords, subject category, title, geographic location, measured parameters, measured radionuclides, and publication description. (ERA citation 05:037733)

PAT-APPL-6-106 203 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Submergible Barge Retrievable Storage and Permanent Disposal System for Radioactive Waste.
Patent Application,
F. L. Goldsberry, and W. E. Cawley. Filed 21 Dec 79, 17p
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

A submergible barge and process for submerging and storing radioactive waste material along a seabed are described. A submergible barge receives individual packages of radwaste within segregated cells. The cells are formed integrally within the barge, preferably surrounded by reinforced concrete. The cells are individually sealed by a concrete decking and by concrete hatch covers. Seawater may be vented into the cells for cooling, through an integral vent arrangement. The vent ducts may be attached to pumps when the barge is bouyant. The ducts are also arranged to promote passive ventilation of the cells when the barge is submerged. Packages of the radwaste are loaded into individual cells within the barge. The cells are then sealed and the barge is towed to the desig-

nated disposal-storage site. There, the individual cells are flooded and the barge will begin descent controlled by a powered submarine control device to the seabed storage site. The submerged barge will rest on the seabed permanently or until recovered by a submarine control device. (ERA citation 06:002050)

RHO-BWI-C-66 PC **A17**/MF **A01**
Woodward-Clyde Consultants, San Francisco, CA.
Preliminary Geochemical and Physical Testing of Materials for Plugging of Man-Made Accesses to a Repository in Basalt.
C. L. Taylor, G. J. Anttonen, J. E. O'Rourke, and D. Allirot. Apr 80, 398p
Contract AC06-77RL01030

The available data on environmental conditions (both natural and man-made) at the Hanford Site are sufficient for preconceptual plug system design. Results of the geochemical testing program indicate that preferred candidate plug materials are chemically nonreactive during laboratory tests that simulated some of the expected environmental conditions. Agitated, crushed-basalt samples and mixtures containing basalt were found to be self-cementing under the hydrothermal conditions. Materials considered most suitable for consideration in future test programs and preconceptual plug design are mixtures of natural materials (basalt, clay, glaciofluvial sand, gravel, and zeolite) and processed natural materials (portland cement Type V and grouts plus additives). (ERA citation 05:037738)

RHO-CD-34-4Q PC **A11**/MF **A01**
Atomics International Div., Richland, WA. Rockwell Hanford Operations.
Radioactive Liquid Waste Discharged to Ground in the 200 Areas During 1977.
J. D. Anderson, and B. E. Poremba. 20 Mar 78, 233p
Contract AC06-77RL01030

An overall summary is presented giving the radioactive liquid wastes discharged to ground during 1977 and since start-up (for both total and decayed depositions) within the Rockwell Hanford Operations control zone (200 Area plateau). Overall summaries are also presented for 200 East Area and for 200 West Area. The data contain an estimate of the radioactivity discharged to individual ponds, cribs and specific retention sites during 1977 and from startup through December 31, 1977; an estimate of the decayed activities from startup through 1977; the location and reference drawings of each disposal site; and the usage dates of each disposal site. The estimates for the radioactivity discharged to the ponds also includes major nonradioactive streams. The waste discharged during 1977 to each active disposal site are detailed on a month-to-month basis, along with the monthly maximum concentration and average concentration data. (ERA citation 06:000302)

RHO-CD-79-34-4Q PC **A11**/MF **A01**
Atomics International Div., Richland, WA. Rockwell Hanford Operations.
Radioactive Liquid Wastes Discharged to Ground in the 200 Areas During 1979.
G. J. Sliger. 6 Mar 80, 227p
Contract AC06-77RL01030

An overall summary is presented giving the radioactive liquid waste discharged to the ground during the current year of 1979 and since startup (for both total and decayed depositions) with the Rockwell Hanford Operations (Rockwell) control zone (200 Area plateau). Overall summaries are also presented for 200 East and for 200 West Area. The data contains an estimate of the radioactivity discharged to individual ponds, cribs and specific retention sites during the following periods: (1) All four quarters of 1979; and (2) from startup through December 31, 1979. The location and reference drawings of each disposal site, and the usage dates of each disposal site are given. The estimates for the radioactivity discharged to the ponds also include major nonradioactive streams. The waste discharged during 1979 to each active disposal site is detailed on a month-to-month basis, along with the monthly maximum concentration and average concentration data. (ERA citation 06:000303)

SAND-79-2468 PC **A03**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Assessment of Potential Radionuclide Transport in Site-Specific Geologic Formations.
R. G. Dosch. Aug 80, 42p
Contract AC04-76DP000789

Associated with the development of deep, geologic repositories for nuclear waste isolation is a need for safety assessments of the potential for nuclide migration. Frequently used in estimating migration rates is a parameter generally known as a distribution coefficient, K/sub d/, which describes the distribution of a radionuclide between a solid (rock) and a liquid (groundwater) phase. This report is intended to emphasize that the use of K/sub d/ must be coupled with a knowledge of the geology and release scenarios applicable to a repository. Selected K/sub d/ values involving rock samples from groundwater/brine simulants typical of two potential repository sites, WIPP and NTS, are used to illustrate this concern. Experimental parameters used in K/sub d/ measurements including nuclide concentration, site sampling/rock composition, and liquid-to-solid ratios are discussed. The solubility of U(VI) in WIPP brine/groundwater was addressed in order to assess the potential contribution of this phenomena to K/sub d/ values. Understanding mehanisms of sorption of radionuclides on rocks would lead to a better predictive capability. Sorption is attributed to the presence of trace constituents (often unidentified) in rocks. An attempt was made to determine if this applied to WIPP dolomite rocks by comparing sorption behavior of the natural material with that of a synthetic dolomite prepared in the laboratory with reagent grade chemicals. The results were inconclusive. The results of a study of Tc sorption by an argillite sample from the Calico Hills formation at NTS under ambient laboratory conditions were more conclusive. The Tc sorption was found to be associated with elemental carbon. Available evidence points to a reduction mechanism leading to the apparent sorption of Tc on the solid phase. (ERA citation 06:000306)

SAND-80-1599C PC **A03**/MF **A01**
Sandia Labs., Albuquerque, NM.
Technical Developments in the WIPP Program.
W. D. Weart. 1980, 37p CONF-801077-1
Contract AC04-76DP00789
Association of Engineering Geologists annual meeting, Dallas, TX, USA, 20 Oct 1980.

More than five years of site specific studies have led to the conclusion that radioactive wastes can be safely isolated in the bedded salt of the Delaware Basin in southeast New Mexico. Aspects of particular concern for site integrity, such as regional or local dissolution processes and salt deformation have been thoroughly evaluated and are not believed to present hazards to the repository. Hydrology of the site area has been shown to possess many desirable features with respect to transport of radioisotopes to the bioshpere in the event of a repository breach. Natural resources, potash and hydrocarbons, are present in the area of the site but can be exploited with appropriate precautions. Safety analyses have considered the consequences of their possible attraction to future man. Repository behavior and interactions between waste and the host rock have been studied in the laboratory, in field tests and by calculational methods. In particular, such issues as brine migration and canister corrosion may be shown to have little detrimental impact if modest and practical engineering measures are adopted. Calculations indicate salt deformation and room closure rates may be great enough that a salt repository must be carefully designed in order to assure ready retrieval of emplaced waste over long periods of time. Safety assessment calculations have been performed to determine the consequences of assumed repository failure scenarios. Even the most dire credible (but improbable) natural failure scenarios prove to be benign in their consequences to man. Direct penetration by unknowing, future man could result in significant exposures to the specific individuals involved but would not cause significant population effects. (ERA citation 05:037740)

SAND-80-7121 PC **E02**/MF **$3.00**
TRC Environmental Consultants, Inc., Wethersfield, CT.
Meteological and Air Quality Data, Quarterly Report. WIPP Site: Eddy County, New Mexico. Autumn Quarter, September 1977-November 1977.
L. P. Pocalujka, E. Babij, P. A. Catizone, and H. W. Church. Sep 80, 30p
Contract AC04-76DP00789
Includes 6 sheets of 24X reduction microfiche.

The purpose of the WIPP meteorological, air quality, and radiological measurements program was to support the environmental effort for the evaluation of the site suitability. This data report is the latest in a series of seasonal quarterly data summaries to be issued for the southeastern New Mexico site. (ERA citation 06:001329)

STUDSVIK/K4-79-46 PC **A03**/MF **A01**
Aktiebolaget Atomenergi, Studsvik (Sweden).
Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
K. Malen, L. Jansson, and J. Kilter. Aug 79, 47p
U.S. Sales Only.

In this paper the release of tellurium (Te-132) and cesium (Cs-134 and Cs-137) from UO sub 2 -fuel is analysed. The basis for the analysis is the experimental results from the S176 series of irradiation experiments in the Swedish Aagesta R3 and Studsvik R2 reactors. It seems that the model developed earlier for release of iodine applies also to tellurium and cesium. This model assumes sweeping up of the species in question by moving grain boundaries and subsequent gase phase migration irradiation through grain boundary porosity. Since the cesium isotopes studied are long-lived and since the maximum temperature in most cases was reached at the end of life of the fuel rods the release is almost 100 percent in the central region. An interesting extra feature is the localized deposition of tellurium at temperatures in the range 1500-2000 K believed to be due to condensation at the pressure dependent boiling point. (Atomindex citation 11:524898)

UCID-18681 PC **A02**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Effects of Dimensionality and Boundary Conditions on Thermal Calculations.
L. D. Thorson, and D. N. Montan. 29 Sep 80, 19p
Contract W-7405-ENG-48

We consider several aspects of the thermal modeling of an underground nuclear waste repository. These are the long term temperature response due to different ground surface boundary conditions, the effects of treating the three-dimensional problem in 2-D, and the consequences of using a constant power load rather than decaying power typical of radioactive waste. Our approach is superposition in time and space of the appropriate analytic solutions. (ERA citation 05:037741)

UCRL-84153 PC **A02**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
T. J. Altenbach, and W. E. Lowry. 5 Jun 80, 9p
CONF-801102-14
Contract W-7405-ENG-48
ASME winter annual meeting, Chicago, IL, USA, 16 Nov 1980.

A three-dimensional thermal analysis has been performed using finite difference techniques to determine the near-field response of a baseline spent fuel repository in a deep geologic salt medium. A baseline design incorporates previous thermal modeling experience and OWI recommendations for areal thermal loading in specifying the waste form properties, package details, and emplacement configuration. The base case in this thermal analysis considers one 10-year old PWR spent fuel assembly emplaced to yield a 36 kw/acre (8.9 w/m exp 2) loading. A unit cell model in an infinite array is used to simplify the problem and provide upper-bound temperatures. Boundary conditions are imposed which allow simulations to 1000 years. Variations studied include a comparison of ventilated and unventilated storage room conditions, emplacement packages with and without air gaps surrounding the canister, and room cool-

down scenarios with ventilation following an unventilated state for retrieval purposes. At this low power level ventilating the emplacement room has an immediate cooling influence on the canister and effectively maintains the emplacement room floor near the temperature of the ventilating air. The annular gap separating the canister and sleeve causes the peak temperature of the canister surface to rise by 10 exp 0 F (5.6 exp 0 C) over that from a no gap case assuming perfect thermal contact. It was also shown that the time required for the emplacement room to cool down to 100 exp 0 F (38 exp 0 C) from an unventilated state ranged from 2 weeks to 6 months; when ventilation initiated after times of 5 years to 50 years, respectively. As the work was performed for the Nuclear Regulatory Commission, these results provide a significant addition to the regulatory data base for spent fuel performance in a geologic repository. (ERA citation 06:000314)

18H. Radioactivity

AD-B951 736/8 PC **A09**/MF **A01**
General Electric Co., Santa Barbara, CA. TEMPO.
Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1,
Philip W. Allen, and Lester Machta. 1 Oct 79, 182p DOE-WT-308(EX)
Contract DNA001-79-C-0455
Extracted version of report dated 15 Mar 52, AD-356 275L.
Distribution limitation now removed.

No abstract available.

CONF-801038-3 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Index to the AEC/ERDA/DOE Air Cleaning Conferences.
C. A. Burchsted. 1980, 6p
Contract W-7405-ENG-26
16. DOE nuclear air cleaning conference, San Diego, CA, USA, 20 Oct 1980.

A comprehensive index to the papers in the second through sixteenth AEC/ERDA/DOE Nuclear Air Cleaning Conference is discussed. The index will be published in early 1981 and will be designated as Volume 3 of the proceeding of the sixteenth conference. The index has three parts, a straight numeric tabulation, an author index, and a key word in context (KWIC) index. (ERA citation 05:038702)

DOE/EV/01515-84 PC **A03**/MF **A01**
Wisconsin Univ.-Madison. Dept. of Soil Science.
Exchange of Lyotropic Series Cations by Micaceous Vermiculite and Its Weathering Products Determined by Electron Microscopy and Radiochemical Analysis. Final Technical Report, June 1, 1965-October 31, 1978.
M. L. Jackson. 1978, 30p
Contract AS02-76EV01515

Micaceous vermiculite was found to be ubiquitous in soils, sediments, and aerosol mineral dusts and to adsorb fission product ions, particularly exp 137 Cs exp + and exp 90 Sr exp 2+ . Crystallographic wedge zones (imaged by ultramicrotomy and electron microscopy) in micaceous vermiculite effected tight fixation of Cs exp + . Lowering of mica layer charge occurred in local areas, electronoscopically imaged by use of blister-swelling cations. Nuclear fission particle tracks of U enhanced translayer diffusion of elements, measured mica layer charge and age. Iron-aluminum hydrous oxide coatings adsorbed divalent cations of the alkaline earth, transition, and heavy metal elements from trace concentrations in the presence of 1 M NaNO sub 3 . Global deposition of dust by rainfall accounted for the wide distribution of Cs-fixing micaceous vermiculite in soils. Origin of the dust was traced through a method developed for isolation of fine quartz silt (1 to 10 mu m diameter). Mass spectrometry of its exp 18 O/ exp 16 O isotopic ratios showed distinctly higher (delta exp 18 O = 17 to 22% sub 0) and lower (delta exp 18 O = 9 to 15% sub 0) ranges in the Northern and Southern Hemispheres, respectively. This difference was traced to the relative proportions of quartz from low-temperature authigenic (chert) vs igneous-metamorphic origin in the respective latitudes, hinging on trans-equatorial continental drift. (ERA citation 06:001336)

DOE/EV/10305-1 PC **A02**/MF **A01**
Colorado State Univ., Fort Collins. Dept. of Radiology and Radiation Biology.
Radioecological Investigations of Uranium Mill Tailings Systems. Progress Report, September 1, 1979-September 30, 1980.
F. W. Whicker. 10 Oct 80, 7p
Contract AC02-79EV10305

The initial 13 months of this program have been devoted to staffing, development of a radiochemistry capability, development of a mill tailings reclamation study, studies on hydraulic properties of soils, initiation of plant uptake studies, preparation for metabolic studies with deer and antelope, and sample collections. Through the addition of new personnel and equipment, we are rapidly developing analytical capabilities for exp 238 U, exp 230 Th, exp 226 Ra, exp 210 Pb and exp 210 Po in matrices such as soil, water, plant material, and animal tissues. A 4 acre study site was developed in cooperation with the Pathfinder Mines Corp. at the Shirley Basin Uranium Mine in Wyoming. The study site is designed for investigations on the influence of various kinds and thicknesses of mill tailings soil covers on the integrity of reclaimed tailings and inherent radionuclides. Studies on the hydraulic properties of various soil materials were conducted and data analysis is in progress. Plots and procedures for conducting plant uptake studies on uranium and progeny were established and long-term investigations have been initiated. A colony of tame mule deer and pronghorn antelope has been developed for studies on the uptake and retention of exp 210 Pb and exp 210 Po. Numerous collections of soil, vegetation and water from the Shirley Basin Uranium Mine environs were conducted and radiochemical assay is in progress. (ERA citation 06:001339)

DP-1552 PC **A02**/MF **A01**
Du Pont de Nemours (E.I.) and Co., Aiken, SC. Savannah River Lab.
Computer Code to Assess Accidental Pollutant Releases.
M. M. Pendergast, and J. C. Huang. Jul 80, 22p
Contract AC09-76SR00001

A computer code was developed to calculate the cumulative frequency distributions of relative concentrations of an air pollutant following an accidental release from a stack or from a building penetration such as a vent. The calculations of relative concentration are based on the Gaussian plume equations. The meteorological data used for the calculation are in the form of joint frequency distributions of wind and atmospheric stability. (ERA citation 05:038703)

DP-1566 PC **A03**/MF **A01**
Du Pont de Nemours (E.I.) and Co., Aiken, SC. Savannah River Lab.
Calculation of Particulate Dispersion in a Design-Basis Tornadic Storm from the Atomics International Nuclear Material Development Facility, Santa Susana, California.
D. W. Pepper. Jul 80, 28p
Contract AC09-76SR00001

A three-dimensional numerical model is used to calculate ground-level air concentration and deposition (due to precipitation scavenging) after a hypothetical tornado strike at the Atomics International Nuclear Material Development Facility at Santa Susana, California. Plutonium particles less than 20 mu m in diameter are assumed to be lifted into the tornadic storm cell by the vortex. The rotational characteristics of the tornadic storm are embedded within the larger mesoscale flow of the storm system. The design-basis translational wind values are based on probabilities associated with existing records of tornado strikes in the vicinity of the plant site. Turbulence exchange coefficients are based on empirical values deduced from experimental data in severe storms and from theoretical assumptions obtained from the literature. The method of moments is used to incorporate subgrid-scale resolution of the concentration within a grid cell volume. This method is a quasi-Lagrangian scheme which minimizes numerical error associated with advection. In all case studies, the effects of updrafts and downdrafts, coupled with scavenging of the particulates by precipitation, account for most of the material being deposited within 50 km downwind of the plant site. Ground-level isopleths in the x-y plane show that most of the material is deposited behind and slightly to the left of the centerline trajectory of the storm. Approximately 5% of the material is dispersed into the stratosphere and anvil section of the storm. (ERA citation 05:038704)

ORNL-5462 PC **A04**/MF **A01**
Oak Ridge National Lab., TN.
Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
F. F. Haywood, D. J. Christian, E. T. Loy, D. Lorenzo, and B. S. Ellis. Oct 80, 75p
Contract W-7405-ENG-26

Results of a radiological survey conducted at the Falls City, Texas, site in July 1976 are presented. There are seven partial to fully stabilized tailings piles, and an overburden pile from an open-pit mine. Above ground gamma-ray exposure rate measurements show moderate levels of contamination throughout the area with a maximum exposure rate of 500 mu R/hr above tailings pile 2. The average exposure rate over the different areas varied from 14 mu R/hr over the southwest end of tailings pile 7 to 207 mu R/hr over the northeast end of the same pile. Analyses of surface soil and dry-wash sediment samples, as well as calculations of subsurface exp 226 Ra distribution, serve to define the spread of tailings around the area. Water erosion of the tailings is evident, but, because of abundant growth of vegetation on the tailings piles, wind erosion probably is not a major problem. (ERA citation 05:038712)

UCID-18783 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Preliminary Comparisons Between Measurements and Model Calculations for the TMI Venting of exp 85 Kr.
M. H. Dickerson. Aug 80, 21p
Contract W-7405-ENG-48

ARAC was on-line calculating hourly concentration values during the TMI-2 venting of exp 85 Kr gas from June 28 to July 11, 1980. During this time hourly isopleths of normalized instantaneous concentration were calculated and transmitted to EPA in Middletown, PA. These isopleths were used to help locate the EPA and Penn State mobile air samplers and they were used for comparison to the EPA fixed 24 hr sampler measurements and the DOE helicopter measurements. This report summarizes preliminary comparisons for the EPA fixed samplers and the DOE helicopters. (ERA citation 05:038164)

UCRL-52959 PC **A03**/MF **A01**
California Univ., Livermore. Lawrence Livermore Lab.
Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
J. B. Knox, M. H. Dickerson, G. D. Greenly, P. H. Gudiksen, and T. J. Sullivan. 1 Jul 80, 37p
Contract W-7405-ENG-48

At 0820 PST on 28 March 1979, the Department of Energy's Emergency Operations Center advised the Atmospheric Release Advisory Capability (ARAC) that the Three Mile Island nuclear power plant in Harrisburg, Pennsylvania, had experienced an accident some four hours earlier, resulting in the atmospheric release of xenon-133 and krypton-88. This report describes ARAC's response to the Three Mile Island accident, including the role ARAC played throughout the 20 days that real-time assessments were made available to the Department of Energy on-scene commander. It also describes the follow-up population-dose calculations performed for the President's Commission on Three Mile Island. At the request of the Nuclear Regulatory Commission a questionnaire addressing the usefulness of ARAC products during the accident was sent to ARAC-product users. A summary of the findings from this questionnaire, along with recommendations for improving ARAC service, is also presented. The accident at Mississauga, Ontario, Canada, is discussed in the con-

text of a well-planned emergency response by local and Federal officials. (ERA citation 05:038708)

18I. Reactor Engineering and Operation

AD-A092 304/5 PC **A05**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Interactive Code for a Pressurized Water Reactor Incorporating Temperature and Xenon Feedback.
Master's thesis,
Gregory Garver Heath. Jun 80, 94p

An interactive computer model of a highly enriched pressurized water reactor was developed, using the applicable plant parameters from the Shippingport Atomic Power Station. The point reactor kinetics equations for one delayed neutron precursor group were linearized using small perturbation theory. The model included both moderator and Xenon-135 reactivity feedback effects, as well as an automatic reactor protection and average reactor coolant temperature control system. The thermal response of the model plant was simulated for normal operating transients induced either by control rod or turbine load changes. The post shutdown Xenon transient response was also modeled. The interactive program was coded in FORTRAN-IV language, and the simulation program was coded in IBM CSMP-III language. (Author)

BNL-NUREG-26903 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
PWR Steamline Break Analysis Assuming Concurrent Steam Generator Tube Rupture.
W. G. Shier, and M. M. Levine. 1980, 18p CONF-801002-9
Contract AC02-76CH00016
ANS/ASME topical meeting on reactor thermal-hydraulics, Saratoga, NY, USA, 9 Oct 1980.

Results are presented for a steamline break analysis for a typical, two-loop, 2560 MW(t) pressurized water reactor. The calculations were performed using the IRT reactor system transient analysis code. Included are the analyses of steamline break transients assuming concurrent steam generator tube rupture (up to 30 steam generator tubes). Graphical and tabular results are presented. (ERA citation 05:038180)

BNL-28288 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Breeder Design for Enhanced Performance and Safety Characteristics.
G. J. Fischer, B. Atefi, J. W. Yang, A. Galperin, and M. Segev. 1980, 12p CONF-800942-12
Contract AC02-76CH00016
ANS topical meeting on 1980 advances in reactor physics and shielding, Sun Valley, ID, USA, 14 Sep 1980.

A fast breeder reactor design has been created which offers a considerably extended fuel cycle and excellent performance characteristics. An example of a core designed to operate on a ten-year fuel cycle is described in some detail. Use of metal fuel along with a moderator such as beryllium oxide dispersed throughout the core provides both design flexibility and safety advantages such as a strong Doppler feedback and limited sodium void reactivity gain. Local power variations are small for the entire cycle; control requirements are also modest, and fuel cycle costs are low. (ERA citation 05:038131)

CONF-800942-14 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
J. Barhen, D. G. Cacuci, J. J. Wagschal, and C. B. Mullins. 1980, 13p
Contract W-7405-ENG-26
ANS topical meeting on 1980 advances in reactor physics and shielding, Sun Valley, ID, USA, 14 Sep 1980.

The development of a systematic methodology for the reduction of uncertainties in transient thermal-hydraulics by using in-bundle measurement data is presented. The adjustment of the system parameters and responses and the reduction in their respective uncertainties is treated as a time-dependent constrained minimization problem. An on-line (i.e., real time) large scale optimization scheme is also outlined. Although formulated within the framework of reactor safety analysis, the proposed methodology can be directly applied to other areas, for instance to time-dependent fuel cycle optimization and uncertainty analysis. (ERA citation 05:038183)

CONF-800971-2 PC **A03**/MF **A01**
Idaho National Engineering Lab., Idaho Falls.
Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
R. K. McCardell, and P. E. MacDonald. 1980, 32p
Contract AC07-76ID01570
CNSI specialist meeting on safety aspects of fuel behavior in off-normal and accident conditions, Helsinki, Finland, 1 Sep 1980.

This paper presents an overview of the results of the experimental program being conducted in the Power Burst Facility and the relationship of these results to certain safety and licensing issues. The safety issues that were addressed by the Power-Cooling-Mismatch, Reactivity Initiated Accident, and Loss of Coolant Accident tests, which comprised the original test program in the Power Burst Facility, are discussed. The resolution of these safety issues based on the results of the thirty-six tests performed to date, is presented. The future resolution of safety issues identified in the new Power Burst Facility test program which consists of tests which simulate BWR and PWR operational transients, anticipated transients without scram, and severe fuel damage accidents, is described. (ERA citation 05:038185)

CONF-801102-1 PC **A03**/MF **A01**
EG and G Idaho, Inc., Idaho Falls.
Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
W. H. Grush, J. C. Lin, J. H. Linebarger, and R. A. Nelson, Jr. 1980, 26p
Contract AC07-76ID01570
ASME winter annual meeting, Chicago, IL, USA, 16 Nov 1980.

Two 200% cold leg break loss-of-coolant experiments performed in the LOFT facility have exhibited early core-wide quenches which were not predicted by the RELAP4/MOD6 code. Posttest studies have shown that while the critical flow model used significantly affects the hydraulic calculation, the principal reason for not predicting the quench behavior lies in the area of post-CHF heat transfer. The ability of the code to calculate quenches using a modified heat transfer surface is demonstrated, thereby emphasizing the need for better understanding of post-CHF heat transfer processes. (ERA citation 05:038186)

CONF-801102-12 PC **A02**/MF **A01**
Idaho National Engineering Lab., Idaho Falls.
Experimental Determination of Lower Plenum ECC Injection Effectiveness.
R. G. Hanson. 25p
Contract AC07-76ID01570
ASME winter annual meeting, Chicago, IL, USA, 16 Nov 1980.

The effectiveness of lower plenum emergency core coolant (ECC) injection during a double ended offset shear cold leg break loss-of-coolant accident (LOCA) was investigated experimentally in a small-scale model of a pressurized water reactor (PWR). In order to determine relative merit of the lower plenum injection concept to mitigate the severity of a large break LOCA, data from lower plenum injection experiments were compared to data from an experiment in the Semiscale Mod-3 sytem in which cold leg ECC injection was utilized. The results indicated that lower plenum injection was extremely effective in initiating early reflooding of the core and earlier rod quenching than was observed in the cold leg injection experiment. (ERA citation 05:038200)

CONF-801107-1 PC **A02**/MF **A01**
EG and G Idaho, Inc., Idaho Falls.
Response of LOFT SPNDs to Reactor Coolant Density Variations During a LOCA Simulation.
J. P. Adams, and V. T. Berta. 1980, 6p
Contract AC07-76ID01570
ANS international conference, Washington, DC, USA, 17 Nov 1980.

Analysis of self-powered neutron detector (SPND) data taken during loss-of-coolant experiment (LOCE) L2-3 conducted in the Loss-of-Fluid Test (LOFT) facility has shown that the detectors are sensitive, in a qualitative sense, to coolant density variations in the reactor core. These results provide a strong impetus for determining the applicability of self-powered nuclear flux detectors for liquid level measurement in the reactor vessel of a pressurized water reactor (PWR) during transient conditions. This summary discusses the response of the LOFT SPNDs to core coolant density variations in the L2-3 large break experiment and shows the potential application to reactor vessel liquid level measurements during small break accidents in PWRs. (ERA citation 05:038166)

COO-4057-12 PC **A17**/MF **A01**
General Electric Co., Sunnyvale, CA. Advanced Reactor Systems Dept.
Gas Reactor International Cooperative Program. HTR-Synfuel Application Assessment.
Sep 79, 393p
Contract AC02-77ET35202

This study assesses the technical, environmental and economic factors affecting the application of the High Temperature Gas-Cooled Thermal Reactor (HTR) to: synthetic fuel production; and displacement of fossil fuels in other industrial and chemical processes. Synthetic fuel application considered include coal gasification, direct coal liquefaction, oil shale processing, and the upgrading of syncrude to motor fuel. A wide range of other industrial heat applications was also considered, with emphasis on the use of the closed-loop thermochemical energy pipeline to supply heat to dispersed industrial users. In this application syngas (H sub 2 +CO sub 2) is produced at the central station HTR by steam reforming and the gas is piped to individual methanators where typically 1000 exp 0 F steam is generated at the industrial user sites. The products of methanation (CH sub 4 + H sub 2 O) are piped back to the reformer at the central station HTR. (ERA citation 05:038151)

EGG-2056 PC **A13**/MF **A01**
EG and G Idaho, Inc., Idaho Falls.
Tables of Homogeneous Equilibrium Critical Flow Parameters for Water in SI Units.
D. G. Hall, and L. S. Czapary. Sep 80, 288p
Contract AC07-76ID01570

This reference document presents tables and charts containing data calculated using the homogeneous equilibrium critical flow model (HEM). The ranges of stagnation state properties for which data are presented include: pressures from 2 to 22 120kPa, temperatures from 290 to 640 K, and thermodynamic qualities from 0 to 1. (ERA citation 05:038115)

EPRI-NP-1509 PC **A06**/MF **A01**
Battelle Pacific Northwest Labs., Richland, WA.
Improvements to the COBRA-TF (EPRI) Computer Code for Steam Generator Analysis. Final Report.
C. W. Stewart, J. S. Barnhart, and A. S. Koontz. Sep 80, 115p
Contract AC06-76RL01830

The COBRA-TF (EPRI) code has been improved and extended for pressurized water reactor steam generator analysis. New features and models have been added in the areas of subcooled boiling and heat transfer, turbulence, numerics, and global steam generator modeling. The code's new capabilities are qualified against selected experimental data and demonstrated for typical global and microscale steam generator analysis. (ERA citation 05:038121)

GA-A-15885 PC **A03**/MF **A01**
General Atomic Co., San Diego, CA.
Hot Helium Flow Test Facility Summary Report.
Jun 80, 34p

Contract AT03-76ET35300

This report summarizes the results of a study conducted to assess the feasibility and cost of modifying an existing circulator test facility (CTF) at General Atomic Company (GA). The CTF originally was built to test the Delmarva Power and Light Co. steam-driven circulator. This circulator, as modified, could provide a source of hot, pressurized helium for high-temperature gas-cooled reactor (HTGR) and gas-cooled fast breeder reactor (GCFR) component testing. To achieve this purpose, a high-temperature impeller would be installed on the existing machine. The projected range of tests which could be conducted for the project is also presented, along with corresponding cost considerations. (ERA citation 05:038128)

GA-A-15894 PC **A02**/MF **A01**
General Atomic Co., San Diego, CA.
GCFR Steam Generator Conceptual Design.
R. A. Holm, and J. P. Elliott. 1980, 24p CONF-800648-16
Contract AT03-76SF71023
GCFRP program technical review meeting, San Diego, CA, USA, 4 Jun 1980.

The gas-cooled fast reactor (GCFR) steam generators are large once-through heat exchangers with helically coiled tube bundles. In the GCFR demonstration plant, hot helium from the reactor core is passed through these units to produce superheated steam, which is used by the turbine generators to produce electrical power. The paper describes the conceptual design of the steam generator. The major components and functions of the design are addressed. The topics discussed are the configuration, operating conditions, design criteria, and the design verification and support programs. (ERA citation 05:038135)

GA-A-15900 PC **A11**/MF **A01**
General Atomic Co., San Diego, CA.
Gas-Cooled Fast Breeder Reactor. Quarterly Progress Report, February 1-April 30, 1980.
May 80, 246p
Contract AT03-76 SF71023

Information is presented concerning the reactor vessel; reactivity control mechanisms and instrumentation; reactor internals; primary coolant circuits;core auxiliary cooling system; reactor core; systems engineering; and reactor safety and reliability;. (ERA citation 06:000784)

GA-A-16052 PC **A02**/MF **A01**
General Atomic Co., San Diego, CA.
High Temperature Heat Exchange: Nuclear Process Heat Applications.
D. L. Vrable. Sep 80, 11p CONF-800983-1
Contract AT03-76SF71061
Joint Japan/US heat transfer seminar, Tokyo, Japan, 29 Sep 1980.

The unique element of the HTGR system is the high-temperature operation and the need for heat exchanger equipment to transfer nuclear heat from the reactor to the process application. This paper discusses the potential applications of the HTGR in both synthetic fuel production and nuclear steel making and presents the design considerations for the high-temperature heat exchanger equipment. (ERA citation 05:038153)

HEDL-SA-1933 PC **A02**/MF **A01**
Hanford Engineering Development Lab., Richland, WA.
Experience with Simplified Inelastic Analysis of Piping Designed for Elevated Temperature Service.
L. K. Severud. Mar 80, 16p CONF-800804-27
Contract AC14-76FF02170
ASME century 2 emerging technology conference, San Francisco, CA, USA, 10 Aug 1980.

Screening rules and preliminary design of FFTF piping were developed in 1974 based on expected behavior and engineering judgment, approximate calculations, and a few detailed inelastic analyses of pipelines. This paper provides findings from six additional detailed inelastic analyses with correlations to the simplified analysis screening rules. In addition, simplified analysis methods for treating weldment local stresses and strains as well as fabrication induced flaws are described. Based on the FFTF experience, recommendations for future Code and technology work to reduce design analysis costs are identified. (ERA citation 05:038136)

HEDL-SA-1955 PC **A03**/MF **A01**
Hanford Engineering Development Lab., Richland, WA.
Seismic Transient Analysis of a Containment Vessel with Penetrations.
H. J. Dahlke, and E. O. Weiner. Dec 79, 34p CONF-800804-29
Contract AC14-76FF02170
ASME century 2 emerging technology conference, San Francisco, CA, USA, 10 Aug 1980.

A linear transient analysis of the FFTF containment vessel was conducted with STAGS to justify the load levels used for the seismic qualification testing of the heating and ventiliation valve operators. The modeling consists of a thin axisymmetric shell for the containment vessel with four penetrations characterized by linear and rotational inertias as well as attachment characteristics to the shell. Motions considered are horizontal, rocking and vertical input to the base, and the solution is carried out by direct integration. Results show that the test levels and the approximate analyses considered are conservative. Response spectra for some containment vessel penetrations applicable to the model are presented. (ERA citation 05:038137)

HEDL-SA-1992-FP PC **A02**/MF **A01**
Hanford Engineering Development Lab., Richland, WA.
Insulated Pipe Clamp Design.
M. J. Anderson, L. L. Hyde, S. E. Wagner, and L. K. Severud. Jan 80, 15p CONF-800804-31
Contract AC14-76FF02170
ASME century 2 emerging technology conference, San Francisco, CA, USA, 10 Aug 1980.

Thin wall large diameter piping for breeder reactor plants can be subjected to significant thermal shocks during reactor scrams and other upset events. On the Fast Flux Test Facility, the addition of thick clamps directly on the piping was undesired because the differential metal temperatures between the pipe wall and the clamp could have significantly reduced the pipe thermal fatigue life cycle capabilities. Accordingly, an insulated pipe clamp design concept was developed. The design considerations and methods along with the development tests are presented. Special considerations to guard against adverse cracking of the insulation material, to maintain the clamp-pipe stiffness desired during a seismic event, to minimize clamp restraint on the pipe during normal pipe heatup, and to resist clamp rotation or spinning on the pipe are emphasized. (ERA citation 05:038138)

HEDL-SA-1994-FP PC **A02**/MF **A01**
Hanford Engineering Development Lab., Richland, WA.
Seismic Analysis of Piping with Nonlinear Supports.
D. A. Barta, S. N. Huang, and L. K. Severud. Jan 80, 23p CONF-800804-28
Contract AC14-76FF02170
ASME century 2 emerging technology conference, San Francisco, CA, USA, 10 Aug 1980.

The modeling and results of nonlinear time-history seismic analyses for three sizes of pipelines restrained by mechanical snubbes are presented. Numerous parametric analyses were conducted to obtain sensitivity information which identifies relative importance of the model and analysis ingredients. Special considerations for modeling the pipe clamps and the mechanical snubbers based on experimental characterization data are discussed. Comparisions are also given of seismic responses, loads and pipe stresses predicted by standard response spectra methods and the nonlinear time-history methods. (ERA citation 05:038174)

KFKI-1979-26 PC **A02**/MF **A01**
Kozponti Fizikai Kutato Intezet, Budapest (Hungary).
HOTRAN-3 Program for Reactor Core Thermo-hydraulic Studies in the Three-Channel Approximation.
L. Perneczky. May 79, 25p
In Hungarian.
U.S. Sales Only.

HOTRAN-3 is a digital computer code to predict the thermal and hydraulic behaviour of light -water reactor cores during steady state and transient operation in three-channel modelling. The program is a modified version of the HOTRAN-2 code with segmented structure using the SI units in input and output routins, written in FORTRAN language for IBM-360 and ES-1040 computers. In the report there is a manual for users too. (Atomindex citation 11:529167)

NUREG/CR-1469-V-14 PC **A09**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Light Water Reactor Safety Research Program. Volume 14.
Quarterly rept. Oct-Dec 79,
Marshall Berman. Nov 80, 180p SAND-80-0927
See also Volume 13, NUREG/CR-1177.

The Molten Fuel Concrete Interactions (MFCI) study is comprised of experimental and analytical investigations of the chemical and physical phenomena associated with interactions between molten core materials and concrete. The purpose of the MFCI study is to develop an understanding of these interactions suitable for risk assessment. The major emphasis is to identify and investigate the dominant interaction phenomena that occur between prototypic materials in order to evaluate the rate of generation and the nature of evolved noncondensible gases; the effects of gas generation on the release of fission products; and the mechanisms, rate, and directional nature of concrete erosion by the melt.

NUREG-0619-REV-1 PC **A05**/MF **A01**
Nuclear Regulatory Commission, Washington, DC. Office of Nuclear Reactor Regulation.
BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking: Resolution of Generic Technical Activity A-10.
Technical rept.,
R. Snaider. Nov 80, 99p

This report summarizes work performed by the NRC staff in the resolution of Generic Technical Activity A-10, 'BWR Nozzle Cracking'. Generic Technical Activity A-10 is one of the generic technical subjects designated as 'unresolved safety issues' pursuant to Section 210 of the Energy Reorganization Act of 1974. The report describes the technical issues, the technical studies and analyses performed by the General Electric Company and the NRC staff, the staff's technical positions based on these studies, and the staff's plans for continued implementation of its technical positions. It also provides information for further work to resolve the non-destructive examination issue.

ORNL/CSD-53 PC **A06**/MF **A01**
Oak Ridge National Lab., TN.
SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
V. M. Forsberg, J. W. Arwood, N. M. Greene, and G. B. Raiford. Sep 80, 124p
Contract W-7405-ENG-26

SACRD (Safety Analysis Computerized Reactor Data) is a data base of nondesign-related information used in computer codes for fast reactor safety analyses. This document reports the procedures used in SACRD to help assure a reasonable level of integrity of the material contained in the data base. It also serves to document much of the computer software used with the data base. (ERA citation 05:038197)

UCID-18683 PC **A02**/MF **A01**
Lawrence Livermore National Lab., CA.
Technical Evaluation of the Noise and Isolation Testing of the Reactor Protection System for the Davis Besse Nuclear Power Station, Unit 1.
J. C. Selan. 1980, 13p
Contract W-7405-ENG-48

This report documents the technical evaluation of the noise and isolation testing of the reactor protection system (RPS) for the Davis Besse Nuclear Power Station, Unit 1. The testing was performed in accordance to Section 4.6.11, Susceptibility, of MIL-N-19900B, and NRC approved plant test methods. Analysis of the test results shows that the reactor protection system did not degrade

below acceptable levels when subjected to electromagnetic, electrostatic, isolation and noise level tests, nor was the system's ability to perform its Class 1E protective functions affected. (ERA citation 06:000754)

UCRL-15275 PC **A03**/MF **A01**
Teknekron Research, Inc., Berkeley, CA. Systems Div.
Inspection Methods for Physical Protection Task III Review of Other Agencies' Physical Security Activities for Research Reactors.
29p
Contract W-7405-ENG-48

In Task I of this project, the current Nuclear Regulatory Commission (NRC) position-on physical security practices and procedures at research reactors were reviewed. In the second task, a sampling of the physical security plans was presented and the three actual reactor sites described in the security plans were visited. The purpose of Task III is to review other agencies' physical security activities for research reactors. During this phase, the actions, procedures and policies of two domestic and two foreign agencies other than the NRC that relate to the research reactor community were examined. The agencies examined were: International Atomic Energy Agency; Canadian Atomic Energy Control Board; Department of Energy; and American Nuclear Insurers. (ERA citation 05:038176)

UCRL-15281 PC **A09**/MF **A01**
Weidlinger Associates, New York.
Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
D. K. Vaughan, I. Sandler, D. Rubin, J. Isenberg, and H. Nikooyeh. 29 Nov 79, 183p
Contract W-7405-ENG-48

This report describes a three-dimensional nonlinear TRANAL finite element analysis of a nuclear reactor subjected to ground shaking from a buried 50 kg explosive source. The analysis is a pretest simulation of a test event which was scheduled to be conducted in West Germany on 3 November 1979. (ERA citation 06:000753)

18J. Reactor Materials

AECL-6587 PC **A02**/MF **A01**
Atomic Energy of Canada Ltd., Chalk River (Ontario). Chalk River Nuclear Labs.
Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
V. H. Allen, and A. J. Stirling. Aug 79, 10p CONF-790707-37
20. annual meeting of the Institute of Nuclear Materials Management, Albuquerque, NM, USA, 16 Jul 1979.
U.S. Sales Only.

The International Atomic Energy Agency (IAEA) Safeguards System for 600 MW CANDU reactors combines inspection with unattended surveillance and unit bundle accounting to detect and deter spent fuel diversion. It is expected that tamper-indicating bundle counters, located at the entry ports, will be used to establish the inventory of irradiated fuel in the storage bay. The spent fuel counters detect the passage of fuel by the gamma-ray field from the bundles, and the inputs from four strategically placed Geiger counters are decoded by a microprocessor-based readout unit. The paper presents results obtained with a prototype bundle counter on a fuel transfer simulator and it discusses the detection limits which can be expected from the bundle counters. The printed logs of bundle movements, like those which will be provided to the IAEA, and the operaton of safeguards-oriented features are presented. (Atomindex citation 11:529118)

DP-MS-80-6 PC **A02**/MF **A01**
Du Pont de Nemours (E.I.) and Co., Aiken, SC. Savannah River Lab.
Safety Evaluation of a Conceptual Fuel Recycle Complex.
M. E. Hodges. 1980, 20p CONF-800943-17
Contract AC09-76SR00001
National topical meeting of fuel cycles for the 80's, Gatlinburg, TN, USA, 29 Sep 1980.

A conceptual design integration study for an integrated Fuel Recycle Complex (FRC) has been completed. A safety evaluation of the radiation shielding, fire precautions, handling of nonradioactive hazardous materials, criticality hazards, operating errors, and the influence of natural phenomena on the FRC shows that all federal regulations are met or exceeded. (ERA citation 06:000269)

GEFR-SP-222 PC **A03**/MF **A01**
General Electric Co., San Jose, CA. Advanced Reactor Systems Dept.
Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
P. J. Ring, C. N. Spalaris, T. K. Odegaard, and H. P. Offer. Aug 80, 38p CONF-801036-5
Contract AT03-76SF70030
Special topical meeting - materials performance in nuclear steam generators, St Petersburg Beach, FL, USA, 6 Oct 1980.

Work has been carried out to determine the degree of reduced SCC susceptibility obtained by the use of remelted rather than air melted 2 1/4 Cr-1 Mo steel. Both Vacuum Arc Remelt (VAR) and Electro Slag Remelt (ESR) material have been evaluated. This work has consisted of the testing of 2 1/4 Cr-1 Mo specimens in 10% and 20% sodium hydroxide at 232 exp 0 C, usng an autoclave system with a tensile loading capability. The work has continued into an evaluation of stress corrosion resistance as a function of post weld heat treatment (PWHT) and as a function of the extent of weld repair by remelting. The second area where attention has been focused is the Sodium Water Reaction Products System (SWRPRS). In the eventuality of a steam generator water leak and the resultant sodium-water reaction, this system is designed to accept the mixture of water-sodium and concomitant reaction products. Specimen holders have been installed in the SWRP system at the Energy Technology Engineering Center (ETEC). This system is connected to the Large Leak Test Vessel (LLTV) which will be used to provide data on the effects of large water leaks in LMFBR steam generator systems. Prototypical materials representing those alloys used for the sodium-water reaction products system are being exposed under large leak conditions. Critical regions of the system piping have been ultrasonically inspected to provide baseline data. (ERA citation 06:000794)

HEDL-SA-2006-FP PC **A03**/MF **A01**
Hanford Engineering Development Lab., Richland, WA.
Failure Analysis of Carbide Fuels under Transient Overpower (TOP) Conditions.
D. H. Nguyen. Jun 80, 45p CONF-800607-88
Contract AC14-76FF02170
American Nuclear Society annual meeting, Las Vegas, NV, USA, 8 Jun 1980.

The failure of carbide fuels in the Fast Test Reactor (FTR) under Transient Overpower (TOP) conditions has been examined. The Beginning-of-Cycle Four (BOC-4) all-oxide base case, at $.50/sec ramp rate was selected as the reference case. A coupling between the advanced fuel performance code UNCLE-T and HCDA Code MELT-IIIA was necessary for the analysis. UNCLE-T was used to determine cladding failure and fuel preconditioning which served as initial conditions for MELT-III calculations. MELT-IIIA determined the time of molten fuel ejection from fuel pin. (ERA citation 06:000796)

HEDL-SA-2174 PC **A03**/MF **A01**
Hanford Engineering Development Lab., Richland, WA.
State Variable Description of 316 SS Post-Irradiation Mechanical Properties.
G. L. Wire. 1980, 28p CONF-800609-15
Contract AC14-76FF02170
10. international symposium on effects of radiation on materials, Savannah, GA, USA, 3 Jun 1980.

An extensive description of mechanical response of breeder reactor core components to transient loading is required for design and safety analysis. This description is needed for strain rates from 10 exp -5 to 10 exp 1 /s, test temperatures from 232 exp 0 C to over 1000 exp 0 C, and neutron fluences from 0 to 1.3 x 10 exp 23 n/cm exp 2 (E > 0.1 MeV). exp + An equation-of-state approach, proposed by Hart, is applied to existing tensile and burst data to develop an improved method of predicting mechanical behavior over this range of temperature and strain rates. (ERA citation 06:000768)

KFK-2557 PC **A02**/MF **A01**
Kernforschungszentrum Karlsruhe G.m.b.H. (Germany, F.R.). Projekt Wiederaufarbeitung und Abfallbehandlung.
Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
G. Koch, F. Baumgaertner, H. Goldacker, W. Ochsenfeld, and H. Schmieder. Sep 77, 16p CONF-770907-9
International solvent extraction conference, Toronto, Canada, 9 Sep 1977.
U.S. Sales Only.

In 1974 a 'Mark I' solvent extraction flowsheet for a German large-scale LWR fuel reprocessing plant has been designed under the guidance of Gesellschaft fuer Kernforschung (GfK). Since then, several improved procedures have been developed, and have step by step been adopted into the original flowsheet. In preparing the GfK flowsheet, specific attention has been paid to safety and reliability of operation, to the minimization of liquid medium-level wastes, and to the minimization of environmental releases. This paper discuss several of the specific features of the present version of the GfK flowsheet. (orig.) 891 RSH/orig. 892 AMO. (Atomindex citation 11:524834)

KFK-2860 PC **A05**/MF **A01**
Kernforschungszentrum Karlsruhe G.m.b.H. (Germany, F.R.). Entwicklungsgruppe Kernmaterialsicherung.
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
W. Beyrich, and G. Spannagel. Dec 79, 88p EUR-6400E
U.S. Sales Only.

In cooperation with 26 laboratories of 11 countries or international organizations, the Safeguards Project of the Karlsruhe Nuclear Research Center carried out the interlaboratory program AS-76. It focused on the alpha-spectrometric determination of the Pu-238 isotope. The performance of the program as well as the results obtained are described. (Atomindex citation 11:529120)

KFK-2861 PC **A06**/MF **A01**
Kernforschungszentrum Karlsruhe G.m.b.H. (Germany, F.R.). Entwicklungsgruppe Kernmaterialsicherung.
As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
G. Bortels, G. Spannagel, and W. Beyrich. Dec 79, 110p EUR-6401e
U.S. Sales Only.

The AS-76 interlaboratory program furnished 828 alpha spectra. A selection of these spectra was evaluated in more detail by use of information supplied by the laboratories and by application of a common procedure of evaluation. (Atomindex citation 11:529121)

KFK-2862 PC **A04**/MF **A01**
Kernforschungszentrum Karlsruhe G.m.b.H. (Germany, F.R.). Projekt Spaltstoffflusskontrolle.
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
G. Bortels, J. Broothaerts, P. de Bievre, M. Gallet, and W. Wolters. Dec 79, 70p EUR-6402e
U.S. Sales Only.

Four plutonium samples containing 0.2, 0.8, 1.6 and 0.9 Atom% of exp 238 Pu have been prepared for the Interlaboratory Experiment AS-76. Of these, three were input solutions from a reprocessing plant. The fourth sample was from a plutonium

product solution. These samples have been characterized by two alpha spectrometry laboratories and two mass spectrometry laboratories to certify the ratio of alpha activities exp 238 Pu/(exp 239 Pu + exp 240 Pu) and the isotopic composition, respectively. (Atomindex citation 11:529122)

LA-8194-M PC **A09**/MF **A01**
Los Alamos Scientific Lab., NM.
CMB-8 Material Balance System.
D. Langner, T. Canada, N. Ensslin, T. Atwell, and H. Baxman. Aug 80, 189p
Contract W-7405-ENG-36

We describe the automated nondestructive assay (NDA) system installed at the Los Alamos Scientific Laboratory (LASL) Group CMB-8 uranium recovery facility. A random driver (RD) is used to measure the exp 235 U content of various solids while a uranium solution assay system (USAS) measures the exp 235 U or total uranium content of solutions over a concentration range of a few ppM to 400 g/l. Both instruments are interfaced to and controlled by a single minicomputer. The measurement principles, mechanical specifications, system software description, and operational instructions are described. (ERA citation 05:037749)

ORNL/Sub-7496/1 PC **A10**/MF **A01**
Babcock and Wilcox Co., Lynchburg, VA. Power Generation Div.
Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
V. O. Uotinen, W. P. Carroll, H. M. Jones, and E. C. Toops. Jun 80, 210p BAW-1609
Contract W-7405-ENG-26

A study was performed to assess the safety and licenseability of the Babcock and Wilcox standard 205-fuel assembly PWR when it is fueled with three types of thoria-based fuels denatured (exp 233 U/ exp 238 U-Th)O sub 2 , denatured (exp 235 /U exp 238 U-Th)O sub 2 , and (Th-Pu)O sub 2 . Selected transients were analyzed using typical PWR safety analysis calculational methods. The results support the conclusion that it is feasible from a safety standpoint to utilize either of the denatured urania-thoria fuels in the standard B and W plant. In addition, it appears that the use of thoria-plutonia fuels would probably also be feasible. These tentative conclusions depend on a data that is more limited than that available for UO sub 2 fuels. (ERA citation 05:038150)

ORNL-5673 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
A. J. Moorhead, R. W. McCulloch, R. W. Reed, and J. J. Woodhouse. Oct 80, 45p
Contract W-7405-ENG-26

Much of the safety-related thermal-hydraulic tests on nuclear reactors are conducted not in the reactor itself, but in mockup segments of a core that uses resistance-heated fuel rod simulators (FRS) in place of the radioactive fuel rods. Laser welding and furnace brazing techniques are described for joining subassemblies for FRS that have survived up to 1000 h steady-state operation at 700 to 1100 exp 0 C cladding temperatures and over 5000 thermal transients, ranging from 10 to 100 exp 0 C/s. A pulsed-laser welding procedure that includes use of small-diameter filler wire is used to join one end of a resistance heating element of Pt-8 W, Fe-22 Cr-5.5 Al-0.5 Co, or 80 Ni-20 Cr (wt %) to a tubular conductor of an appropriate intermediate material. The other end of the heating element is laser welded to an end plug, which in turn is welded to a central conductor rod. (ERA citation 06:000770)

PB81-850687 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Spent Nuclear Fuel Recovery. May, 1972-February, 1980 (Citations from the NTIS Data Base).
Rept. for May 72-Feb 80,
Thomas G. Stratton. Oct 80, 111p
NERACUSGNT1715
Sponsored by National Technical Information Service, Springfield, VA.

This bibliography discusses the reprocessing of spent nuclear fuel with specific emphasis on cost factors, technology, methods, handling, management, environmental impacts, and the nuclear fuel cycle. (Contains 106 citations.)

PER-26 PC **A02**/MF **A01**
Atomic Energy Board, Pelindaba, Pretoria (South Africa).
Prediction of Concentration Profiles for a NIMCIX Column Absorbing Uranium from Aqueous Solution.
R. S. Wright. 14 May 79, 16p
U.S. Sales Only.

A procedure is proposed for the prediction of concentration profiles for a countercurrent ion-exchange absorption column, use being made of equilibrium and kinetic data derived from small-scale batch tests. A comparison is presented between the predictions and the measured performance of a column (2,5 m in diameter) absorbing uranium from solution. The method is shown to be adequate for design purposes provided that the data used are from tests in which the solution and resin conditions approximate those for which the plant is being designed. (Atomindex citation 11:524836)

PNCT-841-79-05 PC **A03**/MF **A01**
Power Reactor and Nuclear Fuel Development Corp., Tokyo (Japan).
Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
K. Gonda, T. Nemoto, S. Yasu, and S. Miyachi. Feb 79, 32p
In Japanese.
U.S. Sales Only.

The dissolver equipment for chopped fuel and solvent extraction equipment were installed in the hot cell at Operation Testing Laboratory of PNC Reprocessing Plant. This paper describes the mechanism and the maintenance principle of each equipment. (Atomindex citation 11:524830)

18K. Reactor Physics

CONF-800942-10 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Developments in Sensitivity Theory.
D. G. Cacuci, E. Greenspan, J. H. Marable, and M. L. Williams. 1980, 13p
Contract W-7405-ENG-26
ANS topical meeting on 1980 advances in reactor physics and shielding, Sun Valley, ID, USA, 14 Sep 1980.

A review of recent developments in sensitivity theory is presented with an emphasis on (a) extensions to new areas such as thermal hydraulics, reactor depletion, multi-constraint and extrema problems, and (b) recent mathematical refinements to and extensions of the basic theory. The diverse new areas of application are discussed from a unified theoretical viewpoint based on nonlinear functional analysis. Several new applications of sensitivity theory are presented for problems in constrained reactor physics calculations, irradiation experiment analysis, reactor burnup calculations, and transient thermal-hydraulic analysis. Future directions of the research are suggested. (ERA citation 05:038114)

WAPD-TM-1468 PC **A03**/MF **A01**
Bettis Atomic Power Lab., West Mifflin, PA.
Successive Collision Calculation of Resonance Absorption (AWBA Development Program).
E. Schmidt, and L. D. Eisenhart. Jul 80, 35p
Contract AC11-76PN00014

The successive collision method for calculating resonance absorption solves numerically the neutron slowing down problem in reactor lattices. A discrete energy mesh is used with cross sections taken from a Monte Carlo library. The major physical approximations used are isotropic scattering in both the laboratory and center-of-mass systems. This procedure is intended for day-to-day analysis calculations and has been incorporated into the current version of MUFT. The calculational model used for the analysis of the nuclear performance of LWBR includes this resonance absorption procedure. Test comparisons of results with RCPO1 give very good agreement. (ERA citation 05:038141)

18L. Reactors (Power)

PNCT-831-78-02 PC **A06**/MF **A01**
Power Reactor and Nuclear Fuel Development Corp., Tokyo (Japan).
Semi-Annual Progress Report of Power Reactor and Nuclear Fuel Development Corporation, Tokai Works. July-December 1977.
Jul 78, 113p
In French.
U.S. Sales Only.

Separate abstracts were prepared for individual papers in scope. (Atomindex citation 11:524556)

18N. Snap Technology

DOE/ET/33001-T1 PC **A02**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Kilowatt Isotope Power System: Component Test Procedure for the Ground Demonstration System Radiator Bypass Valve.
14 Jul 77, 23p
Contract AC02-77ET33001

The equipment and procedures to be used to demonstrate the bypass flow characteristics of the Radiator Bypass Valve, P/N 720990, in the Kilowatt Isotope Power System are described. (ERA citation 06:000332)

DOE/ET/33001-T10 PC **A04**/MF **A01**
Teledyne Energy Systems, Timonium, MD.
Kilowatt Isotope Power System: Component Test Report for the Electric Heat Source Assembly. 77-KIPS-108.
E. L. Brainard. 2 Feb 78, 73p
Contract AC02-77ET33001

The purpose of the acceptance testing was to demonstrate that the electrical heat source assembly (EHSA) has completed sufficient testing to satisfy the requirements set forth within the Kilowatt Isotope Power System (KIPS) Component Test Procedure (No. KIPS1020304) for the electrical heat source assembly. The results of the acceptance testing/analysis on the EHSA are presented. (ERA citation 06:000339)

DOE/ET/33001-T11 PC **A05**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Kilowatt Isotope Power System: Test Procedure for the Ground Demonstration System. 77-KIPS-63.
2 Dec 77, 85p
Contract AC02-77ET33001

This test procedure provides a detailed description of the verification methods which shall be used during development, performance and endurance testing to be conducted on the Kilowatt Isotope Power System (KIPS) Development Ground Demonstration Systems, P/N's 722487 and 723829 and Ground Demonstration System (GDS), P/N 725100. The objectives of this testing are to demonstrate system performance in a controlled environment; to verify results of performance predictions; to verify results compiled by component testing performed per Sundstrand Test Procedures and Test Specifications; and to isolate full scale operational characteristics for evaluation. (ERA citation 06:000340)

DOE/ET/33001-T13 PC **A03**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Pump. 77-KIPS-99.
E. L. Brainard. 8 Feb 78, 26p
Contract AC02-77ET33001

The purpose of this test was to demonstrate that the pump utilized for the developmental program to be conducted on the Kilowatt Isotope Power System (KIPS) fulfilled the requirements of Test Procedure 398A, Component Test Procedure for the Ground Demonstration System Pump. The results of the tests are reported. From these results it was concluded that the pump for the Kilowatt Isotope Power System has satisfactorily completed the requirements of Sundstrand Pump Test Procedure, TP 398A. (ERA citation 06:000342)

DOE/ET/33001-T14 PC **A05**/MF **A01**
Teledyne Energy Systems, Timonium, MD.
Kilowatt Isotope Power System: Test Report for the Radiator Long and Short Panels. 77-KIPS-112.
E. L. Brainard. 1 Feb 78, 78p
Contract AC02-77ET33001

The test procedure and results of testing conducted on the Kilowatt Isotope Power System (KIPS) Radiator Panels by Teledyne Energy Systems are presented. The results of the thermal vacuum, heat rejection capability, temperature profile and pressure drop characteristics testing are presented. These results show that the radiator panels can satisfy the test requirements of Teledyne Energy Systems Test Procedure number KIPS 1010300. (ERA citation 06:000343)

DOE/ET/33001-T2 PC **A03**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Kilowatt Isotope Power System: Component Report for the Ground Demonstration System Accumulator.
E. L. Brainard. 31 Jan 78, 32p
Contract AC02-77ET33001

The Model Number ORC1A3A01 System Accumulator for the Kilowatt Isotope Power System was expulsion tested and demonstrated to be in compliance with the requirements of Sundstrand Explusion Test Procedure, TP 400. Test requirements of TP 400 were extracted from the Kilowatt Isotope Power System, Ground Demonstration System Test Plan. (ERA citation 06:000333)

DOE/ET/33001-T26 PC **A07**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Dynamic Isotope Power System: Technology Verification Phase. Component Test Specification for the Ground Demonstration System Alternator Stator. 79-DIPS-41.
16 May 79, 138p
Contract AC02-77ET33001

Test procedures are formulated to ensure that the alternator stator, P/N 719134, satisfies the requirements set forth within the KIPS Technology Verification Plan. (ERA citation 06:000345)

DOE/ET/33001-T29 PC **A02**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Component Test Procedure for the Ground Demonstration System Jet Condenser Focusing.
Jul 77, 24p
Contract AC02-77ET33001

This test procedure provides a detailed description of the verification methods which shall be used in the development program to be conducted on the Dynamic Isotope Power System (DIPS) Jet Condenser to fulfill the requirements of the Ground Demonstration Test Plan. The test objective is to focus the individual elements of the injector so that the total flow will pass through the throat and to characterize the hydraulic performance to assure adequacy for Ground Demonstration System (GDS) Testing. (ERA citation 06:000348)

DOE/ET/33001-T3 PC **A08**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Alternator Stator.
E. L. Brainard. 25 Apr 78, 163p
Contract AC02-77ET3300 i

Results are presented of acceptance tests conducted on the Alternator Stator, S/N 002, for the Kilowatt Isotope Power System. These results show that the Alternator Stator, S/N 002 for the Kilowatt Isotope Power System has satisfactorily completed the testing set forth within Sundstrand Test Specification 2538. Test requirements of TS 2538 were extracted from the Kilowatt Isotope Power System, and Phase I Test Plan. (ERA citation 06:000334)

DOE/ET/33001-T30 PC **A03**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Accumulator. 77-KIPS-100.
E. L. Brainard. 10 Oct 77, 31p
Contract AC02-77ET33001

The purpose of this test was to demonstrate that the system accumulator for the developmental program to be conducted on the Kilowatt Isotope Power System (KIPS) fulfilled the requirements of the test procedure (TP 400) test objectives. The results of the expulsion testing performed on the system accumulator are presented. (ERA citation 06:000349)

DOE/ET/33001-T31 PC **A02**/MF **A01**
Teledyne Energy Systems, Timonium, MD.
Kilowatt Isotope Power System: Test Procedure for the Radiator. 78-KIPS-4.
1977, 24p
Contract AC02-77ET33001

The procedure for conducting performance tests of the full size KIPS (GDS) radiator is outlined. The main emphasis of this test is to evaluate the radiator total pressure drop characteristics, with a secondary objective of evaluating the in-air heat rejection characteristics for comparison with predicted pressure drop and heat transfer values. This procedure is applicable to the in-air test planned on the KIPS GDS radiator (KIPS1010000). The test data to be obtained include the inlet-to-outlet pressure drop as a function of fluid flow rate and the corresponding radiator surface temperature profiles, together with inlet and outlet fluid temperatures. (ERA citation 06:000350)

DOE/ET/33001-T32 PC **A02**/MF **A01**
Teledyne Energy Systems, Timonium, MD.
Kilowatt Isotope Power System: Test Procedure for the Radiator Long and Short Panels. 77-KIPS-111.
1977, 21p
Contract AC02-77ET33001
Portions of document are illegible.

The objective of this document is to outline the procedure for conducting development tests of sections of the KIPS space radiator. The results of these tests will be utilized to determine the final design and anticipated performance characteristics of the full size ground demonstration system (GDS) radiator. This procedure is applicable to the tests planned for the short panel radiator test assembly (KIPS104000-009) and for the long panel radiator test assembly (KIPS104000-019). The test data to be obtained include the pressure drop across the header and individual radiator tube, the temperature profile on the panel and an estimation of the heat rejection capability. The short panel test will be performed under vacuum and -200 +- 10 exp 0 F environment. Tests on the long panel will be conducted under room conditions. (ERA citation 06:000351)

DOE/ET/33001-T33 PC **A11**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Jet Condenser Orifice Performance. 77-KIPS-103.
E. L. Brainard. 8 Nov 77, 229p
Contract AC02-77ET33001
Portions of document are illegible.

The purpose of these tests was to determine which orifice elements achieved satisfactory hydraulic and thermal performance prior to their incorporation into the Jet Condenser Assembly. Requirements were as set forth within the Kilowatt Isotope Power System (KIPS) Component Test Procedure number 414 for the Jet Condenser Orifice Performance testing. The results of the performance testing conducted on the Jet Condenser Orifices are presented. Part Number 720841 Jet Condenser Orifice Nozzle successfully completed the orifice screening tests. (ERA citation 06:000352)

DOE/ET/33001-T4 PC **A02**/MF **A01**
Teledyne Energy Systems, Timonium, MD.
Kilowatt Isotope Power System: Test Procedure for the EHSA Multifoil Insulation. 77-KIPS-109.
1977, 25p
Contract AC02-77ET33001

The procedure is described for conducting the multifoil insulation meltdown test on the electrical heat source assembly (EHSA). The results of the tests will be used to verify the predicted sequence of events during multifoil insulation meltdown and to determine the ultimate steady-state temperatures of the various EHSA components. (ERA citation 06:000335)

DOE/ET/33001-T9 PC **A07**/MF **A01**
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
Kilowatt Isotope Power System. Phase II Plan. Volume III. Addendum Evaluation Criteria.
1977, 139p
Contract AC02-77ET33001

Preliminary evaluation criteria for the following aspects of the Kilowatt Isotope Power System (KIPS) are discussed: thermal environment of the heat source and the equipment and materials in this thermal environment; start-up requirements; power degradation; micrometeorite protection; control system; reliability and failure mode analysis; quality control; cost; and re-entry survivability. (ERA citation 06:000338)

DOE/ET/33004-T1 PC **A02**/MF **A01**
General Atomic Co., San Diego, CA.
Selenide Isotope Power System Design Review Presentation, November 10-11, 1977.
N. B. Elsner, and J. Chin. 1977, 11p
Contract AT03-76ET33004

The status of component fabrication, assessment of vapor suppression systems, and the development of thermal gradient life tests for the selenide isotope power system are reviewed with charts and experimental data. (ERA citation 06:000357)

19

ORDNANCE

19A. Ammunition, Explosives, and Pyrotechnics

AD-A091 988/6 MF **A01**
Army Armament Research and Development Command, Dover, NJ. Large Caliber Weapon Systems Lab.
Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
Special publication,
Susanne J. Bernhardt. Sep 80, 152p ARLCD-SP-80006, AD-E400 484
Availability: Microfiche copies only.

The Manufacturing Methods and Technology(MMT) Program serves the U.S. Army Materiel Development and Readiness Command(DARCOM) as a link between research and development activities and production. The primary aim of the program is to reduce the cost of weapon systems acquisition by improving the efficiency of manufacturing processes and implementing new technology. Although cost reduction is a primary concern, emphasis is also focused on reducing air and water pollution, increasing safety, conserving energy, and reducing dependence on critical materials.

AD-A092 071/0 PC **A09**/MF **A01**
New Mexico Inst. of Mining and Technology, Socorro. TERA Group.
HIBAL Program Preliminary Warhead-Design. Volume I.
15 Sep 80, 198p Rept no. NMT/TERA-T-80-1356-U-VOL-1
Contract N00024-79-C-5333
See also Volume 2, AD-A092 072. Original contains color plates: All DTIC and NTIS reproductions will be in black and white.

This report presents the results of tests done under the Preliminary-Warhead-Design Task of the HIBAL Program. In this preliminary testing stage, basic engineering data were collected on the performance of various HIBAL-fragments, and various HIBAL-warheads. The results obtained from these tests will be used to provide warhead models for the 2nd phase of the HIBAL end-game-analysis effort. The warheads showing the greatest lethality (highest Pk) in the analysis will be selected for the design and fabrication of a set of prototype warheads for use in demonstration firings scheduled for the fall of 1980. The first year's effort in HIBAL consisted of a survey of aerospace contractors to identify potential HIBAL applications, creation of a HIBAL-fragment vulnerability-data-base, and a preliminary end-game analysis comparing numerous HIBAL 'paper' designs.

AD-A092 072/8 PC **A06**/MF **A01**
New Mexico Inst. of Mining and Technology, Socorro. TERA Group.
HIBAL Program. Preliminary Warhead-Design. Volume II. Appendices.
15 Sep 80, 104p Rept no. NMT/TERA-T-80-1356-U-VOL-2
Contract N00024-79-C-5333
See also Volume 1, AD-A092 071. Original contains color plates: All DTIC and NTIS reproductions will be in black and white.

Contents: Appendix I - Summary of Fragment Mat Tests Conducted in Support of the Fireformed Fragment Warhead Designs; Appendix II - Residual Weight of 560-grain fragments After 10,000-ft/sec Impacts with Thin Stainless Steel Targets; Appendix III - Methodology for Predicting Warhead Fragment Velocity and Polar Ejection Angle Characterizations; and Appendix IV - 19-inch-Diameter Warhead-Sector Calibration-Tests.

AD-A092 348/2 PC **A03**/MF **A01**
Army Armament Research and Development Command, Dover, NJ. Large Caliber Weapon Systems Lab.
Analytical Chemistry of 2,4,6-Trinitrotoluene.
Final rept.,
Thomas C. Castorina. Oct 80, 34p ARLCD-SP-80007, AD-E400 487

An annotated bibliography of the analytical chemistry of 2,4,6-trinitrotoluene is presented covering a period from 1940 to 1979, in the areas of wet chemical, thermogravimetric, electrochemical, chromatographic, spectrophotometric, and spectrometric methods of analyses.

AD-A092 375/5 PC **A02**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
Final rept.,
Charles H. Murphy. Sep 80, 13p ARBRL-MR-03060, AD-E430 531
Supersedes Rept. no. BRL-IMR-686.

Results of a published theory of the effect of a moving internal part on the angular motion of a spinning projectile are summarized and applied to a projectile with an internal cantilever beam. An example of a 155mm shell is worked out in detail.

AD-A092 410/0 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Ball Obturation of a Spin Stabilized Tubular Projectile.
Master's thesis,
James Wayne Bloomer, II. Jun 80, 127p

An analytical model was constructed to predict the response of the ball obturator in a ball obturated, spin stabilized tubular projectile (BOT). Torques acting on the obturator were considered to be due to fluid and sliding friction forces. An experimental apparatus was designed, and built to simulate the BOT. Data obtained were the times required for the obturator to nutate through a known angle over a range of projectile angular velocities. Utilizing published coefficient of sliding friction information and a linear approximation of the exact solution, the trend in the data to go through a minimum value was duplicated. A least squares fit of the linear approximation to the data allowed the formulation of a new sliding friction coefficient. Using this value, values from the exact solution and the experimental data was constructed. The correlation is extremely good so that confidence in the predictive capabilities of the model was gained.

AD-A092 416/7 PC **A05**/MF **A01**
Hercules, Inc., Cumberland, MD. Allegany Ballistics Lab.
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
Final Rept.,
J. H. Agosti, R. W. Courtney, R. G. Hunt, and W. L. Easterling. Oct 80, 99p A02010-520-03-007, ARLCD-CR-80022, AD-E400 444
Contract DAAK10-79-C-0246

A safety analysis has been performed on the X4 multi-tooled Iowa detonator loader. The operations, equipment and personnel hazards were considered. The loader is a press loading and assembly machine, designed to load and assemble four detonators simultaneously using NOL-130, lead azide, and RDX explosives. Potential hazards were identified and recommendations were made for reducing the probability of fire or explosion and for reducing the severity of an incident should one occur. Accident expectancies were established and compared with goals set forth in DRCPM-PBM Memorandum 385-3. Additional tests and analyses were recommended where warranted.

AD-B000 729/4 PC **A03**/MF **A01**
Naval Ordnance Lab., White Oak, MD.
A Characterization Study of Several Heat Resistant Explosives.
Final rept. 1 Jul 73-30 Jun 74,
E. Eugene Kilmer. 4 Oct 74, 35p Rept no. NOLTR-74-177
Distribution limitation now removed.

Three heat resistant explosives were chosen as candidates for study of their physical and chemical characteristics. As a part of this study, the chemical synthesis and detonation properties were investigated to determine their suitability in applications to small explosive components. These secondary explosive candidates were subjected to temperatures approaching 315 C (600 F). The best candidate was selected for further study. (Author)

AD-B004 405/7 PC **A03**/MF **A01**
General Electric Co., Bay Saint Louis, MS. Engineering and Science Services Lab.
Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
Technical rept. Jul-Nov 74,
Fred L. McIntyre. Mar 75, 42p EA-4D91, EM-CR-75001
Contract NAS8-27750
Distribution limitation now removed.

A hazards evaluation was conducted to identify and determine the magnitude of hazards in full-scale blending of Violet Smoke Mix IV by the Jet Airmix Process. Subscale and full scale blending tests and critical mass and thermal ignition tests were conducted to determine the effects of geometry on sub-scale and full scale tests. Results indicate that hazards associated with mixing Violet Smoke Mix IV are minimal. (Author)

AD-B007 705/7 PC **A05**/MF **A01**
AAI Corp., Cockeysville, MD.
Development of a Thin-Wall 20mm Explosive Projectile.
Final rept. Apr 74-Apr 75,
Walter L. Black. May 75, 76p AAI-ER-8296, AFATL-TR-75-76
Contract F08635-74-C-0116
Distribution limitation now removed.

Development of an improved 20mm high explosive incendiary (HEI) projectile is discussed. Improved performance is accomplished by configuration changes which reduce projectile weight, improve the aerodynamic shape, and increase the high explosive material. The improvements are achieved by thinning the projectile walls, by the choice of material, heat treat, and incorporation of a plastic rotating band. The analytical design and test experience acquired in developing this improved projectile are reviewed. Details of the operating conditions for the injection molding process used to apply the plastic rotating bands are given. (LS-PL).

AD-B010 100/6 PC **A04**/MF **A01**
Coloney (Wayne H) CO Inc Tallahassee Fla
GFU-6/E 30mm Ammunition Loader for GAU-8A Gun System.
Final rept. Sep 74-Oct 75,
Charles E. Benedict. Dec 75, 53p AFATL-TR-75-158
Contract F08635-75-C-0021
Distribution limitation now removed.

This effort involved the technical evaluation of an engineering model; design, fabrication and testing of the prototype; delivery of the system to Eglin AFB, Florida for gun system interface and technical assistance during the test and evaluation at Edwards AFB, California. A single prototype was constructed. Descriptions and details of the system and its operation are included and safety, reliability and maintainability features are discussed. Recommendations for engineering changes for a production loader are also included. (Author)

AD-B013 302/5 PC **A06**/MF **A01**
Army Electronics Command, Fort Monmouth, NJ.
A Methodology for Predicting Ammunition Requirements as a Function of Force Size.
Final rept.,
Edward M. Kelley. 11 Jun 76, 107p
Master's thesis.
Distribution limitation now removed.

Fundamental to military planning is accurate prediction of ammunition requirements to support combat operations. Although this is a recognized fact, it is an area of planning with many uncertainties, misconceptions, and a widespread lack of understanding. In dealing with this general problem, this thesis addresses the more specific problem of the relationship of ammunition requirements as a function of the size of the force under consideration. A methodology which relates ammunition requirements to the size of the force in terms of the number of weapons of a given type in the force is proposed. A modification of the Delphi method is applied to determine the validity of the results of the application of the methodology.

AD-B013 355/3 PC **A02**/MF **A01**
Air Force Armament Lab., Eglin AFB, FL.
Yaw Card Range Tests of a 30mm Frangible TP Projectile.
Final rept. Mar 75-Sep 75,
Kenneth O. West. Jan 76, 20p Rept no. AFATL-TR-76-5
Distribution limitation now removed.

Experimental results of yaw card range test of a 30mm frangible TP projectile are presented. Results include experimentally determined static and dynamic stability derivatives and drag coefficients obtained at a free-flight Mach number of 3.02. (Author)

AD-B014 108/5 PC **A02**/MF **A01**
Air Force Armament Lab., Eglin AFB, FL.

Yaw Card Range Tests of a 30mm Target Projectile.
Final rept. Mar-Sep 75,
Kenneth O. West. Jan 76, 23p Rept no. AFATL-TR-76-1
Distribution limitation now removed.

Experimental results of yaw card range tests with 30mm target projectiles are presented. Results include experimentally determined static and dynamic stability derivatives and drag coefficients obtained at a free-flight Mach number of 3.0. (Author)

AD-B015 193/6 PC **A05**/MF **A01**
Systems, Science and Software, La Jolla, CA.
A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
Final rept. 4 Feb-30 Jun 76,
L. J. Hageman, R. T. Sedgwick, and J. L. Waddell. Aug 76, 77p SSS-R-76-2986, AFATL-TR-76-97
Contract F08635-75-C-0044
Distribution limitation now removed.

The two-dimensional HELP computer program was employed to augment two earlier parametric investigations involving the effects of varying the material properties of a heavy metal penetrator on the normal penetration of a 5.08-cm-thick steel plate. The projectile material properties that were varied were the shear yield strength, the tensile failure threshold, the shear modulus, and the bulk modulus. Conclusions were drawn from analysis of the results from the current calculational effort as well as those from the two previous studies. (Author)

AD-B015 229/8 PC **A04**/MF **A01**
Naval Surface Weapons Center White Oak Lab., Silver Spring, MD.
A Characterization Study of Several Heat Resistant Explosives in Mild Detonating Cords.
Final rept. 1 Jul 74-31 Dec 75,
E. Eugene Kilmer. 30 Aug 76, 56p Rept no. NSWC/WOL/TR-76-43
DDC Form 55 not necessary for document request.
Distribution limitation now removed.

A study was made of the performance of three new heat resistant explosives fabricated into mild detonating cords. Cords were exposed to temperatures from 280 C to 326 C in sealed copper tubes. After exposure to these temperatures, the cord detonation velocity was measured. The dynamic compressibility and heat of formation of TPT were also determined. TPT was judged to be the best explosive for heat resistant detonating cord and was characterized to generate data for a procurement specification. (Author)

AD-B024 828/6 PC**$6.00***
Air Force Armament Lab., Eglin AFB, FL.
XM714 Delay Fuze Tests.
Final rept. Jun-Jul 76,
William F. Wade, Jr. Nov 76, 45p Rept no. AFATL-TR-76-131
Distribution limitation now removed.

Presented in this report are the results of the XM714 delay fuze tests performed by AFATL at Eglin AFB, Florida. The fuze was carried by a lightweight, thin-walled 20mm projectile body with a mechanically locked plastic rotating band. Forty inert fuzes and projectiles were fired to evaluate fuze structural integrity, and 266 live high-explosive (HE) projectiles and fuzes were fired to evaluate fuze performance. Standard M103A1 20mm cases were used with WC870 propellant. The fuzes were fired against aluminum targets of various thicknesses at various impact velocities and impact angles. Fuze delay distances were determined using witness plates, x-rays, and counter times. Fuze arming was determined by x-rays. (Author)

AD-B026 541/3 PC**$7.00***
AAI Corp., Cockeysville, MD.
Development of a Lightweight 25mm Explosive Projectile.
Final rept. Mar 76-Jan 77,
Walter L. Black. Jun 77, 56p AAI-ER-8939, AFATL-TR-77-83
Contract F08635-76-C-0192
Distribution limitation now removed.

Design and analysis of an improved 25mm high explosive incendiary (HEI) projectile is discussed. Improved performance is accomplished by configuration changes which reduce projectile weight, improve aerodynamic performance, and increase the high explosive material. The improvements are achieved by thinning the projectile walls, by the choice of material, heat treat, and incorporation of a plastic rotating band. The design and analytical work performed in developing this improved projectile are reviewed. (Author)

AD-B027 446/4 PC**$7.00***
Debell and Richardson Inc Enfield Conn
30MM GAU-8/A Plastic Frangible Projectile.
Final rept. Mar-Dec 76,
Roy B. Steidley. Mar 77, 64p AFATL-TR-77-36
Distribution limitation now removed.

A 30mm target practice (TP) projectile, designed to break up on impact with the earth, has been developed for the GAU-8/A aircraft cannon. The projectile consists of a stack of steel washers supported by a central steel tube and encapsulated by and bonded to an outer shell of fiber glass reinforced nylon 12 plastic. A fiber glass reinforced nylon 12 plastic nose, which is molded onto the projectile through the central tube, closes one end of the projectile. A steel end cap, bonded to the outer plastic shell, closes the other end. The projectile has been demonstrated to remain intact through an extensive series of single shot gunfire tests at muzzle velocities of 3500 ft/sec when conditioned over a temperature range of -65 F to + 160 F. Accuracy in these tests met specifications for GAU-8 target practice ammunition. However, additional single shot tests performed with samples from the final 300 projectiles delivered under the contract showed accuracy and structural integrity problems. These projectiles incorporated all design and fabrication procedure changes developed under this contract to solve these problems. As a result, the Air Force has decided to delay further development of this projectile design concept. (Author)

AD-B032 093/7 PC **A06**/MF **A01**
Naval Explosive Ordnance Disposal Facility Indian Head MD
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
Final rept. Sep-Oct 78,
William A. Humphrey, and Paula A. Gaines. Nov 78, 102p Rept no. NAVEODFAC-TR-199
Distribution limitation now removed.

The Naval Explosive Ordnance Disposal Facility conducted tests to determine the cutting and penetration effects of 20-,30-,40-,60-,75-,125-,225-,300-,400-,500-, and 600-grain-per-foot lead-sheathed flexible linear shaped charges (FLSC's) filled with CH-6 explosive, for use as a general-purpose tool by joint-service explosive ordnance disposal personnel. Tests were conducted on 25-millimeter-thick (1-inch-thick) aluminum (2024-T4), 51-millimeter-thick (2-inch-thick) aluminum (2024-T351), and 25- and 51-millimeter (1- and 2-inch-thick) mild steel (1018) witness plates, both with and without standoff material. In addition to the FLSC tests, tests were conducted on the same type of witness plates using Mk 8 Mod 2 and Mk 7 Mods 1 through 8 linear shaped-charge containers, hand packed with composition C-4 explosive, to document and compare their cutting and penetration effects with those of the FLSC's. The results of the tests indicate the flexible linear shaped charges filled with CH-6 explosive are superior to comparable Mk 7 linear shaped charges due to their wider range in sizes. Also, the Mk 7 linear shaped-charge containers suffer from problems encountered in hand packing explosive in cold weather; inconsistency between individual packers; and rigid construction, which causes problems in placement on curved or bent surfaces. (Author)

AD-B038 157/4 PC **A07**/MF **A01**
Boston Coll., Chestnut Hill, MA. Dept. of Physics.
Spectroscopic Investigations of Energetic Materials and Associated Impurities.
Interim rept. 1 Sep 77-31 Aug 78,
B. Di Bartolo, D. P. Pacheco, and M. J. Shultz.
Jun 79, 144p NAVEODFAC-TR-211
Contract N00174-77-C-0287
Distribution limitation now removed.

The detection of explosive devices through analysis of the characteristic emitted vapors has been attempted in the past using a variety of techniques. However, little work has been performed on the spectroscopic properties of these vapors. By obtaining fundamental data on these properties, the feasibility of employing such a detection technique can be determined. Along these lines, we have performed extensive studies of the absorption characteristics of a number of explosive and explosive-related compounds, both in the vapor phase and in solutions. Specifically, the materials studied include 2,3 DNT, 2,4 DNT, 2,6 DNT, TNT, nitroglycerine, diphenylamine, ethyl centralite, monomethylamine, RDX, cyclohexanone, and PETN. The solution spectra were recorded in order to obtain useful supplementary information on the general behavior of the absorbing species. Flash photolysis experiments on TNT were conducted in solution in order to identify and study the characteristic dissociation products. This technique can be extremely useful in determining whether the photodecomposition properties of certain explosive materials can be used as a basis for their detection. Initially, this work has been done in solution as a prelude to vapor-phase dissociation studies.

AD-892 684/2 PC **A03**/MF **A01**
Naval Weapons Center, China Lake, CA.
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
Technical publication,
I. S. Kurotori, and H. C. Schafer. Feb 72, 35p NWC-TP-5174, GIDEP-347.60.00.00-X7-43
Distribution limitation now removed.

Minimum and maximum temperatures (385,221 data points) from explosive hazard storage magazines located at Yuma, Arizona; Subic Bay, Philippines; and Fort Richardson, Alaska are used to construct cumulative distribution curves. These distribution curves show the probability that ordnance, stored in these magazines, will reach any given air temperature. They allow an objective judgment to be made on maximum and minimum earth-covered storage magazine temperature specifications. (Author)

PAT-APPL-6-181 924 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Taggants with Explosive Induced Magnetic Susceptibility.
Patent Application,
Carl Boyars. Filed 27 Aug 80, 14p AD-D007 854/3
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This application discloses a color-coded taggant for the post-detonation identification of explosive material. Retrieval of the taggant after detonation of an explosive is facilitated by the addition of nickel formate to the taggant. The additive renders the taggant magnetically susceptible only after detonation. This eliminates the possibility of the unauthorized removal of the taggant by a magnet before detonation but retains the advantages of facile retrieval by means of a magnet subsequent to detonation.

PB81-120206 PC **A03**/MF **A01**
Weapons Systems Research Lab., Adelaide (Australia).
Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
Technical rept.,
R. L. Pope. Jul 80, 45p WSRL-0166-TR, AR-002-011

As part of a program to develop methods for studying the exterior ballistics of shells, an initial series of four shells was fired at Woomera. Two shells carried yawsondes designed and manufactured at the Ballistic Research Laboratories in the United States of America and two carried preliminary designs of a locally developed yawsonde. Trajectory of the shells was obtained from radar tracking. Both the trajectory and the yawsonde data were analyzed using parameter estimation algorithms

and the results of the data analysis are reported here. Roll damping, axial force and normal force derivatives were determined for subsonic speeds up to Mach 0.8. Conclusions on the efficacy of the trials technique have been reached and these lead to recommendations for future trials.

PB81-120222 PC **A02**/MF **A01**
Weapons Systems Research Lab., Adelaide (Australia).
Results from Trials of a New Yawsonde Design.
Technical rept.,
R. L. Pope. Aug 80, 19p WSRL-0172-TR, AR-002-043

A series of three trials has been conducted using artillery shells fitted with yawsondes. The first two yawsondes were manufactured from a new Weapons Systems Research Laboratory design while the third yawsonde was supplied by the Ballistic Research Laboratory, USA. These were the first trials of the WSRL design and provided useful data for the first quarter of the flight of the shell. Analysis of the data was somewhat hampered by the absence of trajectory data and of accurate calibrations for the WSRL yawsondes; however, some useful results have been obtained from the data analysis and these are reported here. The report includes a brief description of the trial conditions and a summary of suggestions for improving the quality and usefulness of the data obtained from subsequent trials.

PPPL-1710 PC **A02**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Impurity Ions in a Rotating Tokamak.
S. Yoshikawa. Oct 80, 7p
Contract AM02-76CH03073

It is pointed out that the impurity ions in rotating toroidal plasmas tend to behave like trapped particles. That may explain the observed fact. (ERA citation 06:001675)

19B. Bombs

AD-B008 209/9 PC **A07**/MF **A01**
Arnold Engineering Development Center, Arnold AFS, TN.
Magnus and Roll-Damping Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
Final rept.,
A. R. Wallace, and T. O. Shadow. Dec 75, 144p AEDC-TR-75-163, AFATL-TR-75-159
Prepared in cooperation with ARO, Inc., Tullahoma, Tenn., Rept. no. ARO-VKF-TR-75-146.
Distribution limitation now removed.

Wind tunnel tests to Measure the Magnus and roll-damping characteristics of a bomb shape, which is a candidate for replacement of the MK-82 Snakeye Bomb, were conducted at Mach numbers from 0.4 to 1.3 and Reynolds numbers, based on model diameter from 540,000 to 1,000,000. Two basic fin configurations, the fixed fin (FF) and the inflatable stabilizer retarder with extender (ISRE), were tested with and without wedge-shaped tabs and slots.

19C. Combat Vehicles

AD-A092 236/9 PC **A02**/MF **A01**
Army Test and Evaluation Command, Aberdeen Proving Ground, MD.
Cooling Systems (Automotive).
Final rept. on test operations procedure.
7 Nov 80, 12p Rept no. TOP-2-2-607
Supersedes Rept. no. MTP-2-2-607 dated 10 Aug 66, AD-718 002.

Provides guidance for preparing detailed test plans for use in development and production testing of cooling systems for military vehicles. The procedures in this TOP describe how to evaluate the cooling ability of the engine, power-train, and transmission cooling systems when these systems are subjected to wide-open and part-throttle tests, steering effects tests, and extreme environmental tests. (Author)

AD-A092 277/3 PC **A04**/MF **A01**
Grumman Aerospace Corp., Bethpage, NY. Research Dept.
Analytical Model for the Turning of Tracked Vehicles in Soft Soils.
Final rep.t,
Leslie L. Karafiath. Oct 80, 61p TARADCOM-TR-12522
Contract DAAK30-78-C-0080

An analytical model has been developed for the steady state turning of tracked vehicles in soft soils. The tracks of the vehicle are modeled by a series of rigid plates, each representing track lines directly loaded by the roadwheels. The action of the track links in between the directly loaded ones is represented by a surcharge pressure. The soil is modeled by its Coulomb strength parameters; the interface between soil and track is characterized by the interface friction angle and slip. Track-soil interaction models have been developed separately for the outer track (driving mode) and inner track (braking mode), using plasticity theory for the determination of soil reactions. The slewing forces needed to overcome the turning resistances are determined iteratively. The yaw center offset is determined on the principle that it minimizes the turning resistance. Examples show the applications of the model for the determination of turning resistance, maximum speed of steady state turning and horsepower requirement for various military vehicles and soil conditions. (Author)

AD-A092 350/8 PC **A02**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
Tank Wars General Information Manual.
Memorandum rept.,
Fred L. Bunn. Oct 80, 15p ARBRL-MR-03065, AD-E430 540

This report describes a computerized Monte-Carlo model of combat between as many as 20 armored vehicles. It gives general information at the management level rather than going into details of the model. The model includes the simulation of these features: individual round or burst firing; various target switching policies; M, F, MF, and K kills; firing- signature and nonfiring detections; and three levels of acquisition including the Hunter-Killer concept. The model provides for multiple levels of output including Event Histories for individual replications as well as more detailed and more aggregated levels of output.

AD-A092 393/8 PC **A02**/MF **A01**
Army Test and Evaluation Command, Aberdeen Proving Ground, MD.
Swimming Tests of Wheeled and Tracked Vehicles.
Final rept. on test operations procedure.
18 Nov 80, 16p Rept no. TOP-2-2-501
Supersedes Rept. no. MTP-2-2-501 dated AD-717 990. See also Rept. no. TOP-2-2-612, AD-A086 959 and TOP-9-2-251, AD-759 772.

This TOP describes tests to assess the performance of tactical wheeled and tracked vehicles in water, including personnel carriers, cargo carriers, trucks, trailers, etc., that have either built-in floating/swimming capability or kits to enable them to float or swim. Land performance of such vehicles is evaluated in accordance with pertinent standard TOPs in Volume 2, while fording tests are described in TOP 2-2-612. Tests of amphibious vehicles, boats, barges, and motorcraft are described in TOP 9-2-251.

AD-A950 103/2 PC **A06**/MF **A01**
Human Resources Research Organization, Alexandria, VA.
Preliminary Outline of Driver Duties and Tasks for US/FRG MBT-70.
Interim rept.,
Ronald E. Kraemer, Gary G. Boycan, and Louis C. Pierce. May 67, 110p
Contract DA-44-188-ARO-2
Revision of report dated Jan 67.

No abstract available.

AD-A950 104/0 PC **A11**/MF **A01**
Human Resources Research Organization, Alexandria, VA.
Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section I. Automotive Maintenance.
Interim rept.,
Ralph W. Graham, and William C. Osborn. Jul 68, 238p
Contract DA-44-188-ARO-2
Revision of report dated Jan 68. See also Section 2, AD-A950 105.

No abstract available.

AD-A950 105/7 PC **A11**/MF **A01**
Human Resources Research Organization, Alexandria, VA.
Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section II. Turret Maintenance.
Interim rept.,
William C. Osborn, and Ralph W. Graham. Jul 68, 234p
Contract DA-44-188-ARO-2
Revision of report dated Jan 68. See also Section 1, AD-A950 104.

No abstract available.

AD-A950 107/3 PC **A10**/MF **A01**
Human Resources Research Organization, Alexandria, VA.
Preliminary Outline of Crew Duties and Tasks for Operation of the M60A1E1/E2.
Research by-product rept.,
Louis C. Pierce, Jr. Feb 68, 219p
Contract DA-44-188-ARO-2

No abstract available.

AD-A950 108/1 PC **A04**/MF **A01**
Human Resources Research Organization, Alexandria, VA.
Preliminary Outline of Tank Commander Duties and Tasks for US/FRG MBT-70.
Interim rept.,
Gary G. Boycan, and Ronald E. Kraemer. May 67, 61p
Contract DA-44-188-ARO-2
Revision of report dated Jan 67. See also AD-A950 104.

No abstract available.

AD-A950 109/9 PC **A08**/MF **A01**
Human Resources Research Organization, Alexandria, VA.
US/FRG MBT-70 Crew Functional Procedures and Performance Standards.
Research by-Product rept.,
Gary G. Boycan. Jan 68, 170p
Contract DA-44-188-ARO-2
See also AD-A950 104.

No abstract available.

19D. Explosions, Ballistics, and Armor

AD-A091 886/2 PC **A08**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
A Congeries of Numerical Models used at the BRL.
Special publication,
J. M. Heimerl. Sep 80, 159p ARBRL-SP-00016, AD-E430 523

This report consists of a directory of over 100 numerical models of computer codes used by the BRL scientific and technical community in mid-1979. The specific information within the directory provides a brief description of each model, of its

strengths and of its limitations, as well as a point of contact for more detailed information. To provide rapid access to information within this directory, cross indexing has been arranged by task area, by code name, by point of contact and by word concept.

AD-A091 978/7 PC **A04**/MF **A01**
Kaman AviDyne, Burlington, MA.
Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
Final rept. 1 Mar-15 Dec 79,
J. Ray Ruetenik, Norman P. Hobbs, and Robert F. Smiley. 15 Dec 79, 61p KA-TR-176, DNA-5155F
Contract DNA001-79-C-0224

The REFLECT code was modified for calculation of the interaction of six equal blast waves from simultaneously detonated charges in a hexagonal pattern. The objective has been to determine whether the REFLECT code, if further modified, would have the potential for accurate calculation of the interaction of six blast waves. In its present form the code is called REFLECT-3. A calculation was performed for the conditions of the MISERS BLUFF II-2 test, six 120-T ANFO charges separated by 100 m. Comparisons with overpressure and shock arrival time measurements show good agreement, within the data uncertainty, until the incident shock is within about 7 m (20 feet) of the array center. The peak overpressure predicted for the main reflected wave, which contains the highest pressures, agrees well with test results near the array center. Improvement would require reducing the cell sizes and applying the 'sharp' (rankine-Hugoniot) shock modelling not just to the initial shock but to two later shocks as well. (Author)

AD-A092 346/6 PC **A04**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
Strong Blast Wave Computer Programs.
Technical rept.,
Aivars Celmins. Sep 80, 72p ARBRL-TR-02264, AD-E430 538

This report describes a computer program package for the computation of the flow field within a strong blast bubble. The programs are based on Sedov-Laporte-Chang formulas and compute any of the following: shock front location and corresponding flow values, flow profiles at fixed times, flow histories at fixed distances, particle trajectories, and Mach-lines. The input and the output are in terms of dimensional quantities expressed in SI base units. The flow field can be calculated for a ratio of specific heats between one and seven, and for spherical, cylindrical, or planar symmetry.

AD-B007 377/5 PC **A03**/MF **A01**
Ballistic Research Labs., Aberdeen Proving Ground, MD.
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
Memorandum Rept.,
R. R. Karpp, and W. W. Predebon. Jul 75, 31p
Rept no. BRL-MR-2509
Distribution limitation now removed.

Calculational techniques for predicting warhead performance based upon the fragment velocity distribution are presented and compared with experimental data. A simple technique is shown to be inadequate for many practical configurations. For accurate distributions, a two-dimensional, time-dependent, finite-difference code is shown to be adequate. As an integral part of this code, a model for the effects of casing fragmentation and explosive gas leakage has been included. (Author)

AD-B015 343/7 PC **A08**/MF **A01**
Systems, Science and Software, La Jolla, CA.
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
Final rept. Jul 74-Jun 75,
Laura J. Hageman, Darin E. Wilkins, Robert T. Sedgwick, and Jerry L. Waddell. Apr 76, 170p AFATL-TR-76-45-Bk-1
Contract F08635-75-C-0044
See also Book 2, AD-B015 344L.
Distribution limitation now removed.

HELP is a two-dimensional, multimaterial, Eulerian Code for solving material flow problems in the hydrodynamic and elastic-plastic regimes. Although the code is basically Eulerian, material interfaces and free surfaces are propagated through the Calculation Mesh, in a Lagrangian manner, as discrete interfaces across which the materials are not allowed to interdiffuse. This interface treatment gives HELP a distinct advantage over other pure Eulerian Codes and allows it to be applied to the solution of a variety of complex, multimaterial problems. The basic HEPL techniques have been exercised over a wide range of solutions including hypervelocity and ballistic impact, fragmentation munitions, shaped charge jet formation, and shaped charge jet penetration. Considerable confidence has been gained in the basic numerical model. (Author)

AD-B015 344/5 PC **A12**/MF **A01**
Systems, Science and Software, La Jolla, CA.
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
Final rept. Jul 74-Jun 75,
Laura J. Hageman, Darin E. Wilkins, Robert T. Sedgwick, and Jerry L. Waddell. Apr 76, 265p AFATL-TR-76-45-Bk-2
Contract F08635-75-C-0044
See also Book 1, AD-B015 343L.
Distribution limitation now removed.

The primary functions of each subroutine as well as the definitions of important variables are presented. The flags and conventions which are unique to the HELP code are also listed and discussed. The HELP input and output are illustrated by considering three representative calculations: (1) Shaped charge liver collapse, (2) perforation of a this target, and (3) impact into a thick target.

AD-B040 233/9 PC **A03**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
Memorandum rept.,
Paul G. Baer, Michael S. Bushell, Ingo W. May, and Jerome M. Frankle. Jan 79, 39p ARBRL-MR-02896, SBIE-AD-E430281
Supersedes rept. no. ARBRL-IMR-452.
Distribution limitation now removed.

As a part of Project CASBL(Continuous Automatic Single Base Propellant Line), two gun interior ballistic computation methods were evaluated for the purpose of replacing charge establishment gun firings with predictions from a model. Such predictions in a continuous propellant production plant would eliminate the delay encountered when propellant acceptance tests were conducted at a proving ground. A differential coefficient method and an interior ballistic method based on ballistic similitude were used to predict the performance of a large number of 155-mm and 175-mm propellant production lots and a few experimental lots whose chemical and physical properties spanned the extreme ranges of variability to be expected during production. Of these two methods, the differential coefficient method gave the better results. In general, the standard deviation of error values for muzzle velocity using the differential coefficient method is about one half that of the ballistic similitude method.

19E. Fire Control and Bombing Systems

AD-A092 174/2 PC **A03**/MF **A01**
Army Test and Evaluation Command, Aberdeen Proving Ground, MD.
Safety Evaluation of Fire Control Systems - Electrical and Electronic Equipment.
Final rept. on test operations procedure.
15 Aug 80, 32p Rept no. TOP-3-2-503
Supersedes Rept. no. TOP-3-2-503 dated 20 Oct 76, AD-A035 606.

This TOP provides procedures for evaluating the safety of electrical and electronic equipment in fire control systems for tank weapons and field and air defense artillery. Checklists are included as a guide for identifying electrical and electronic hazards, mechanical hazards and miscellaneous other hazards. (Author)

AD-B001 109/8 PC **A05**/MF **A01**
Interand Corp Chicago Ill
INTERAND Target Annotation System.
Final rept. 16 Apr-17 Aug 73,
James Baker, and Carl Groom. Nov 74, 93p GS-7301, AFAL-TR-74-66
Contract F33615-73-C-1249
Distribution limitation now removed.

System provides facilities to record notes, transfer visual information to sensor operators, record graphic annotation in synchronism with the sensor video recording. Functional descriptions are given of subassemblies including the position decoder, graphics distribution unit, recorder/reproducer, scan converter and video keyer. (Author)

AD-B010 501/5 PC **A04**/MF **A01**
Texas Instruments, Inc., Dallas.
RF-4C Digital Signal Transfer Unit Multisensor Display System (DSTUMDS).
Final technical rept. 1 Nov 73-15 Sep 74,
Glynn Raymer. Feb 76, 73p TI-U3-707600-02, AFAL-TR-75-170
Contract F33615-74-C-1111
Distribution limitation now removed.

This document is a final report which describes the design, development, and preliminary evaluation of a Digital Signal Transfer Unit Multisensor Display System (DSTUMDS) for the RF-4C aircraft and associated avionics equipment. The body of this report outlines program objectives, equipment description and a general theory of equipment operation.

19F. Guns

AD-A092 027/2 PC **A03**/MF **A01**
Harry Diamond Labs., Adelphi, MD.
Design of Fluidic Devices for Small Arms Stabilization,
Chris E. Spyropoulos, and Lyndon S. Cox. Nov 70, 34p Rept no. HDL-TR-1539

The feasibility of stabilizing small arms in full automatic fire by use of fluidics was investigated. The man-gun interaction was studied to define the role of the fluidic system components. A system consisting of angular rate sensors, signal amplifiers, a fluid-to-mechanical converter, and a controllable muzzle device was postulated. A hydraulic analog of muzzle gas flow was developed to aid in design of the controllable muzzle device. This analog expands the gas-flow time scale by a factor of one thousand. Thus, designs are easily modeled, and the resulting flow interaction with the model is readily observable in the laboratory. The proposed system appears to be feasible, and the design techniques for further development are available. (Author)

AD-A092 344/1 PC **A03**/MF **A01**
Battelle Columbus Labs., OH.
Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.
Contract rept.,
Leonard H. Caveny. Oct 80, 40p ARLCD-CR-80016, AD-E400 490
Contract DAAG29-76-D-0100
Prepared in cooperation with Princeton Univ., NJ.

Experimental studies of steel erosion were performed using three propellant types (i.e., double base, triple base, and RDX composite). Propellants of each type were formulated to have isochoric flame temperatures of approximately 2700, 3000, and 3300K. The experiments (performed in a combustor that used conventional perforated grains) produced mass loss data over a range of pressure-versus-time (P-T) programs. The propellant charge weights were selected to produce rather severe melt-and-wipe-off type of erosion.

The combined effects of varying the propellant type and the P-T program produce interactions which greatly complicate the interpretation of the erosion-producing processes. In an effort to relate the results to gun barrel erosion, the various propellant grains and duty cycles were compared on the basis of equivalent muzzle velocity. Hence, the erosion data were correlated in terms of the integral of P-T. For equivalent P-T integrals and flame temperatures, RDX composite propellant grains were clearly the most erosive, whereas the erosivity was less for the double and triple base propellant grains (which has similar erosivity). Within a propellant type, the hottest propellants (3300K) generally produced mass losses twice as great as the nominal propellants (3000K).

AD-A092 351/6 PC **A02**/MF **A01**
Army Armament Research and Development Command, Aberdeen Proving Ground, MD. Ballistics Research Lab.
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
Technical rept.,
Irvin C. Stobie, Timothy L. Brosseau, and Robert P. Kaste. Sep 80, 23p ARBRL-TR-02265, AD-E430 534

The heat input into an M68 cannon was measured using an imbedded thermocouple technique. M735, M392 and M490 rounds were evaluated with emphasis on the high loading density M735 rounds. Position, type, temperature and gluing techniques of wear reducing liners were evaluated. It was determined that the minimum tube life for the high loading density M735 rounds based on 1.91 mm (75 mil) condemnation criteria would be 220 rounds under the present configuration. This minimum number could be increased to 3820 rounds using techniques described in this report.

AD-A950 106/5 PC **A04**/MF **A01**
Human Resources Research Organization, Alexandria, VA.
Preliminary Outline of Gunner Duties and Tasks for US/FRG MBT-70.
Interim rept.,
Gary G. Boycan, Ronald E. Kraemer, and Ralph W. Graham. May 67, 74p
Contract DA-44-188-ARO-2
Revision of report dated Jan 67.

No abstract available.

AD-B004 403/2 PC **A03**/MF **A01**
Army Arctic Test Center, APO Seattle 98733.
Check Test of Launcher, Grenade, 40mm, M203, under Arctic Winter Conditions.
Final rept. 20 Nov 74-26 Feb 75,
Benjamin P. Owen. 14 Apr 75, 50p
Distribution limitation now removed.

The U.S. Army Arctic Test Center conducted a Check Test of an Improved Launcher, Grenade, 40mm, M203 under arctic winter conditions at Fort Greely, AK. The purpose of the test was to evaluate improvements intended to correct previously reported problems related to guide rails, handgrips, and primer punchouts. The test was conducted at ambient temperatures varying from -4 Fto -64 F in a variety of typical arctic field locations. A total of 1000 rounds of 40mm, M433, HEDP ammunition was fired from each of five improved M203 launchers. Testing consisted of preoperational inspection, transportability and handling, maintenance evaluation, reliability, and adequacy of corrective actions. Cold weather performance characteristics of the 40mm, M433, HEDP ammunition were recorded and reported for information only. It was concluded that the previously reported problems had been corrected and that the improved M203 launcher can be operated successfully in the arctic winter environment. It was recommended that the improved M203 launcher be considered acceptable for use in the Arctic.

AD-B026 310/3 PC **A04**/MF **A01**
Army Armament Materiel Readiness Command Rock Island II Cost Analysis Div
Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
Technical rept.,
Gene Johnston, Gerald Kalal, Joseph Robinson, and Laurence Stoll. Nov 77, 58p Rept no. DRSAR-CPE-77-9
Distribution limitation now removed.

Parametric estimating of the recurring investment costs for tank main armament systems has recently been improved with new modeling techniques, as well as with an improved data base. This report illustrates the use of such estimating techniques as prepared for the XM1 Tank Main Armament Evaluation (TMAE). It also expands parametric estimating techniques to white phosphorous (WP), antipersonnel (APERS), and target practice discarding sabot (TPDS) rounds. The options covered in this study are: the US option using the 105mm M68 gun, the United Kingdom's 120mm rifled gun, and the Federal Republic of Germany's GE 120mm smoothbore gun. Each gun is furnished an appropriate family of ammunition. The scope of the weapon Independent Unit Production Cost is limited to the recurring unit manufacturing cost of the cannon and breech assemblies including engineering and product assurance support, but excluding first destination transportation. The ammunition cost excludes the cost of Government engineering and quality assurance support, but includes first destination transportation.

AD-B029 722/6 PC **A04**/MF **A01**
Army Command and General Staff Coll., Fort Leavenworth, KS.
US Military Hand Guns. Examination of Literature for the Last Twenty Years.
Final rept.,
Robert J. Ament. 9 Jun 78, 71p
Master's thesis.
Distribution limitation now removed.

This paper attempts to consolidate and categorize the extensive literature available that relates to US Army military hand guns, and to provide analysis of that information for future studies and decisions. The literature search reveals that the usefulness of sources listed in priority is as follows: Defense Documentation Center, Air University Index, gun enthusiast magazines, and Readers' Guide to Periodical Literature. Recommendations include questions for future efforts in the following areas: commercial hand guns, M1911A1 modifications, training, hand gun design, bullet design, manufacturing, multi-projectiles, machine pistols, costs, and microballistics. (Author)

AD-885 260/0 PC **A07**/MF **A01**
Southwest Research Inst., San Antonio, TX.
Blast Fields About Rockets and Recoilless Rifles.
Final technical rept. Dec 69-May 71,
Wilfred E. Baker, Peter S. Westine, and Roger L. Bessey. May 71, 133p
Contract DAAD05-70-C-0170
Distribution limitation now removed.

The report presents the results of an extensive series of measurements of the blast fields generated by firing of recoilless rifles and solid-propellant rocket motors. Peak overpressures and positive impulses are reported for blast waves in free air as well as waves reflected from plane surfaces located near the weapons and parallel to their lines of fire. Test techniques and equipment are described in some detail. Model laws are given for scaling pressures and impulses in the blast fields about recoilless rifles, and these laws corroborated by comparison with experimental results from these and previous tests. Attempts were made to generate scaling laws for prediction of blast parameters about rockets, but proved unsuccessful. Significant differences were observed in the characteristics of pressure fields generated by different rockets, and these differences are discussed in the report. (Author)

20. PHYSICS

20A. Acoustics

AD-A091 879/7 PC **A02**/MF **A01**
Massachusetts Inst. of Tech., Cambridge. Research Lab. of Electronics.
A Technique for the Evaluation of Circularly Symmetric Two-Dimensional Fourier Transforms and Its Application to the Measurement of Ocean Bottom Reflection Coefficients,
Alan V. Oppenheim, George V. Frisk, and David R. Martinez. 1980, 10p
Contract N00014-75-C-0951
Pub. in Digital Signal Processing, p87-95 1980. Prepared in cooperation with Woods Hole Oceanographic Inst., MA on contract N00014-77-C-0196.

No abstract available.

AD-A091 880/5 PC **A02**/MF **A01**
Woods Hole Oceanographic Institution, MA.
A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom,
George V. Frisk, Alan V. Oppenheim, and David R. Martinez. 20 Aug 79, 15p Rept no. WHOI-CONTRIB-4403
Contract N00014-77-C-0196
Pub. in Jnl. of Acoustical Society of America, v68 n2 p602-612 Aug 80. Prepared in cooperation with Massachusetts Inst. of Tech., Cambridge. Research Lab. of Electronics, contract N00014-75-C-0951.

No abstract available.

AD-A091 966/2 PC **A02**/MF **A01**
Lamont-Doherty Geological Observatory, Palisades, NY.
Seafloor and Near-Surface Sound Velocities from Barents Sea Sonobuoy Data.
Journal article,
Robert E. Houtz. 8 Jun 79, 8p Rept no. LDGO-3007
Contract N00014-75-C-1126
Pub. in Jnl. of Geophysical Research, v85 nB9 p4838-4844, 10 Sep 80.

No abstract available.

AD-A092 062/9 PC **A02**/MF **A01**
New York Univ., NY. Courant Inst. of Mathematical Sciences.
Propagation, Scattering, and Reflection of Waves in Continuous and Random Inhomogeneous Media, and Nonlinear Boundary Value Problems.
Final technical rept. Aug 75-Sep 78,
Edward L. Reiss. Sep 78, 10p
Contract N00014-76-C-0010

The research work on this project centered about two major subjects. The first is the development of asymptotic, perturbation, and numerical methods for sound wave propagation in the oceans, atmosphere, and other waveguides. The second area is the development of similar methods for solving nonlinear problems. Particular emphasis was given to the nonlinear problems that arise in, bifurcation theory, the nonlinear buckling of elastic plates and shells, and hydrodynamic stability. (Author)

AD-B022 435/2 PC **A03**/MF **A01**
Navy Underwater Sound Lab., New London, CT.
Congrats Temperature and Salinity to Sound Speed Conversion.
Technical memo.,
Jeffrey S. Cohen, and Thelda A. Garrett. 10 Nov 69, 36p Rept no. USL-TM-2070-412-69
Distribution limitation now removed.

CONGRATS (CONtinuous Gradient RAy Tracing System) is an integrated collection of ray tracing

programs designed to model acoustic propagation and reverberation. Although sound speed data is often obtained from temperature and salinity readings at various depths, the fundamental CONGRATS programs, S0990 and S0991, formerly required a table of velocity versus depth as an input. Hence, it was sometimes necessary to convert the empirical data into a velocity-depth profile before using the CONGRATS series. CONGRATS has now been revised to convert a temperature and salinity profile to a velocity profile automatically. Velocity data is still accepted by the programs. It is hoped, however, that the use of the new option will remove the burden of some preliminary hand computations from the user. This memorandum contains a discussion of the method used in the conversion of temperature to velocity, a detailed description of the data necessary to implement the conversion, a sample run along with its output, and a listing of the revised Subroutine INPUT and the new Subroutine BT.

AD-500 169/8 PC **A05**/MF **A01**
Southwest Research Inst., San Antonio, TX.
Development and Evaluation of a Sonic Intrusion Detector.
Final technical rept. 14 Feb-14 Sep 68,
Lewis S. Fountain, Thomas E. Owen, and James W. Vest. Feb 69, 99p SwRI-15-2315, RADC-TR-68-535
Contract F30602-68-C-0251
Distribution limitation now removed.

A program was initiated to establish optimum design parameters and to incorporate these parameters into four specially developed pulse-echo type sonic intrusion detectors. The problem involved a study of ultrasonic pulse propagation in the atmosphere including reflection signals from target objects. A second part of the problem was the design, development and construction of the electronic system and transfer-reflector assembly. Ultrasonic pulse propagation measurements made both indoors and outdoors showed the air medium to have a nominal composite energy attenuation coefficient of 0.12 dB per foot for a transmitted pulse consisting of a burst of 23-kHz sound energy. Air turbulence under wind conditions of about 5 to 10 miles per hour caused received signals to fluctuate in amplitude by as much as 20 dB. Indoors the fluctuation was usually less than 5 dB. Under stronger wind conditions the greater turbulence caused echo signals to be received erratically because the narrow beam from the reflector assembly was swept completely off of the target. Reflection losses were measured for a number of selected targets. Generally, it was found that transmission loss versus target distance from the transmitter could also be calculated for the selected targets.

PATENT-4 219 888 Not available NTIS
Department of the Navy, Washington, DC.
Surface Acoustic Signal Defader.
Patent,
Herman Medwin. Filed 8 Dec 78, patented 26 Aug 80, 7p AD-D007 867/5, PAT-APPL-967 749 Supersedes PAT-APPL-967 749-78, AD-D005 730.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

A surface acoustic signal defader for optimizing the signal received from underwater sound scattered from the ocean surface. The bandwidth of the underwater sound source is monitored and the frequency of maximum signal strength frequency fades a predetermined amount, reception is switched to the signal of maximum anti-correlation. This process is continuous such that when the new frequency fades the anti-correlation process will determine the optimum frequency for the new fading condition, thus resulting in optimum reception of surface scattered underwater sound.

20B. Crystallography

AD-A092 003/3 PC **A02**/MF **A01**
Rome Air Development Center, Hanscom AFB, MA. Deputy for Electronic Technology.
Defects Induced by Seed Orientation during Quartz Growth,
A. F. Armington, J. A. Bruce, L. E. Halliburton, and M. Markes. 8 Mar 80, 4p Rept no. RADC/ETR-80-0031
Pub. in Jnl. of Crystal Growth, v49 p739-742 1980.

No abstract available.

INIS-mf-5644 PC **A05**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Color Centers in KCN: a Structural Analysis of Crystalline Domains.
Tese (Ph.D.),
Mar 76, 97p
In Portuguese.
U.S. Sales Only.

Pure single crystals of KCN exposed to X-rays showed several color centers detected by EPR. The F center was identified through the correlation of its optical absorption band, which satisfies the Ivey law for the KCN lattice parameter, and the EPR spectrum typical of a center in an anionic site. Two other color centers were identified: N exp -2 and HCN exp - . Two centers assigned to hydrogen atoms have their models proposed: U sub 2 and U sub 3 centers. Two other centers remain unidentified: an anionic center and an extrinsic center. The orthorhombic character of the N exp -2 center EPR parameters allowed an structural analysis of the crystal line domains in the orthorhombic phase. The optical absorption spectrum of the HCN exp - center in KCl matrix was investigated and showed a set of resolved bands with a constant energy splitting; this splitting was associated to a vibrational mode of the excited state of this molecular ion. (Atomindex citation 11:519091)

NRCN(TN)-023 PC **A02**/MF **A01**
Israel Atomic Energy Commission, Beersheba. Nuclear Research Center-Negev.
Computer Program for the Determination of X-Ray Reflections from a Randomly Oriented Polycrystalline Sample by Diffractometer.
G. Kimmel, and J. Sariel. Dec 79, 22p
In Hebrew.
U.S. Sales Only.

A computer program was elaborated in order to calculate the angles and the relative intensities of the reflections for monochromatic x-ray diffraction from a randomly oriented polycrystalline sample of known crystallographic structure, by the diffractometer method. The program is advantageous in the simplicity of its crystallographic input and the possibility it affords to modify all or part of the input for recalculation in the same run. It is suitable mainly for the routine study of different crystallographic structures including solid solutions. The program's memory capacity is flexible so that it can be adapted to that of the computer. (Atomindex citation 11:529162)

20C. Electricity and Magnetism

AD-A092 347/4 PC **A04**/MF **A01**
Army Armament Research and Development Command, Dover, NJ. Technical Support Directorate.
Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
Final rept. Aug-Dec 74,
John F. Van Savage. Nov 80, 60p ARTSD-TR-80001, AD-E400 510

Garments which are worn by munitions handlers have a tendency to accumulate high electrostatic voltages depending on garment material, type of shoes worn, humidity, temperature, and composition of flooring. This test study compared garments made of flameproof cotton with garments made of two types of material woven from Nomex with 1% metal fibers. Electrostatic charge was measured using two methods: Hand discharge to an electrometer and a static meter gun held at 5, 15.25, and 30.5 cm (2, 6, and 12 in).

AD-A092 413/4 PC **A05**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Study of Gas Dynamic Effects in Non-Uniform High Pressure Electrical Discharges.
Rept. for 27 May-2 Aug 80,
Jon L. Barto. Aug 80, 89p Rept no. NPS67-80-005

This report examines gas dynamic stabilization of high pressure, highly non-uniform electrical discharges for two electrode geometries. The geometries studied are the multiple-point to plane and the multiple-wire to plane. A successful analytical model is developed utilizing the anode extension concept, which describes the interaction and stabilizing effects of flow, separating the effects of convection and turbulence, in the point-plane geometry. Comparisons of theory and data are presented, illustrating actual observed and calculated breakdown voltages and currents for a number of cases. Flow stabilized high power density electric discharges are applicable to high power electric discharge lasers, magnetohydrodynamic power generation, and other new systems and technologies. (Author)

AD-A092 482/9 PC **A02**/MF **A01**
Texas Tech Univ., Lubbock. Laser Lab.
Studies of Transient Discharges.
Rept. no. 1 (Final) 15 Jun 77-14 Jun 78,
P. F. Williams, and M. A. Gundersen. 11 May 79, 15p AFOSR-TR-80-1043
Grant AFOSR-77-3365

Progress in our program to study the basic physical processes responsible for laser-induced breakdown of spark gaps is reported. The major accomplishments during this period include the implementation of a gated computer-controlled, optical multichannel analyzer spectroscopy system, the design and construction of a suitable vacuum/pressure cell housing for the spark gap along with necessary support equipment, and the acquisition of preliminary experimental results on laser induced breakdown.

AD-B002 919/9 PC **A04**/MF **A01**
Texas Instruments, Inc., Dallas. Central Research Labs.
Magnetic Bubble Research.
Interim technical rept. no. 3, 16 Nov 73-15 May 74,
F. G. West, D. C. Bullock, J. T. Carlo, W. C. Hubbell, and J. C. Linn. Sep 74, 73p TI-08-74-41, AFAL-TR-74-196
Contract F33615-73-C-1029
Distribution limitation now removed.

Section I of this report treats progress toward a complete conceptual design for the all-bubble processor described in AFAL-TR-74-19. Logic requirements for control and arithmetic functions are discussed in detail. One of the arithmetic units, a Full-Adder, was configured using three different, but complete, sets of logic elements. The result of this exercise is the specification of the complexity of the designs in terms of number of individual logic elements required. Section II treats the continuing work on hybrid technologies. Experimental results relevant to the use of integrated optics for bubble detection are presented. Experience with a Permalloy AND/OR gate is reported in Section III, and some of the difficulties expected in realizing Permalloy logic are pointed out. Results for e-beam patterned and plated Permalloy processed circuits having approximately 0.4 micrometers linewidth geometries are given, and it is concluded that both processing and garnet material capability should now allow successful device fabrication. Lastly, progress toward identifying and remedying problems associated with ion-implant propagation structures is reported. (Author)

20D. Fluid Mechanics

AD-A091 944/9 Not available NTIS
Lumley (John L.), Ithaca, NY.
Some Comments on the Energy Method,
John L. Lumley. 1971, 26p
Contract N00014-79-C-0727
Sponsored in part by Contract N00014-78-C-0088.
Availability: Pub. in Proceedings of the Midwestern Mechanics Conference (12th), v6 p63-88 1971 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A091 971/2 PC **A02**/MF **A01**
Arete Associates, Inc., Santa Monica, CA.
Viscous Flow over Arbitrary Geometries at High Angle of Attack,
William S. Helliwell, Richard P. Dickinson, and Stephen C. Lubard. Jun 79, 19p Rept no. AR-79-052-TR
Contract F04701-78-C-0014

This paper presents a numerical method for obtaining the supersonic, laminar viscous flow about arbitrary geometries without compression surfaces at high angle of attack. In particular, results are presented for blunt biconic bodies with windward and leeward cuts. The basic approach used is to solve the steady three-dimensional 'Parabolized Navier-Stokes Equations' (PNS), first derived for circular cones by Lubard and Helliwell. These equations have been used to predict the flowfield for a variety of different problems, including flow over sharp and blunt cones at angle of attack up to 40 deg, flow over spinning cones at angle of attack, and flow over cones with mass transfer and temperature variations at the surface. In addition to these results which were confined to circular cones, some limited results have been obtained for biconic geometries, non-circular cones and the NASA space shuttle.

AD-A092 175/9 PC **A25**/MF **A01**
Boeing Military Airplane Co., Seattle, WA.
PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
Contract rept. Jan 78-Apr 80,
Alfred E. Magnus, and Michael A. Epton. 15 Apr 80, 598p D180-24910-3-VOL-1, NASA-CR-3251-VOL-1
Contract NAS2-9830

An outline of the derivation of the differential equation governing linear subsonic and supersonic potential flow is given. The use of Green's Theorem to obtain an integral equation over the boundary surface is discussed. The engineering techniques incorporated in the PAN AIR (Panel Aerodynamics) program (a discretization method which solves the integral equation for arbitrary first order boundary conditions) are then discussed in detail. Items discussed include the construction of the compressibility transformation, splining techniques, imposition of the boundary conditions, influence coefficient computation (including the concept of the finite part of an integral), computation of pressure coefficients, and computation of forces and moments.

AD-A092 494/4 Not available NTIS
Notre Dame Univ., IN.
Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body,
J. T. Kegelman, R. C. Nelson, and T. J. Mueller. 1980, 17p ARO-15336.2-E
Contract DAAG29-78-G-0102
Availability: Pub. in AIAA Atmospheric Flight Mechanics Conference, p236-250 11-13 Aug 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-B007 733/9 PC **A05**/MF **A01**
Arnold Engineering Development Center, Arnold AFS, TN.
Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
Final rept.,
C. F. Anderson, and W. E. Carleton. Nov 75, 92p AEDC-TR-75-149, AFATL-TR-75-141
Prepared in cooperation with ARO, Inc., Tullahoma, Tenn., Rept. no. ARO-PWT-TR-75-140.
Distribution limitation now removed.

An investigation was conducted in the Aerodynamic Wind Tunnel (4T) to obtain the static stability and pitch-damping characteristics of the Fixed-Fin (FF) and Inflatable Stabilizer Retarder (ISRe) configurations of the MK-82 store with solid and slotted fins and with various fin tabs. The static phase was conducted using 0.20-scale models, and the dynamic phase was conducted using 0.442-scale models. The tests were conducted at Mach numbers from 0.4 to 1.3 for angles of attack up to 42 deg and Reynolds numbers from 200,000 to 1,000,000 based on the centerbody maximum diameter. All configurations tested were statically and dynamically stable. The ISRe configurations had a greater static stability margin than the FF configurations. Use of the slotted fin reduced the static stability margin of the FF configurations but had no significant effect on the ISRe configurations. The slotted fin had little or no effect on the dynamic stability characteristics. Increasing fin tab angle generally caused an increase in dynamic stability for subsonic Mach numbers and a decrease for supersonic Mach numbers. The dynamic stability generally increased with increasing angle of attack. (Author)

AD-B013 340/5 PC **A04**/MF **A01**
Auburn Univ., AL. Dept. of Aerospace Engineering.
Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
Final rept. Jun 73-Sep 75,
Fred W. Martin, Grady Saunders, Jr., and Malcolm A. Cutchins. Apr 76, 57p AFATL-TR-76-47
Contract F08635-71-C-0090, F08635-75-C-0023
Distribution limitation now removed.

A method of solution for the aerodynamic flow field about two bodies at angle of attack including mutual interference effects has been devised for bodies with circular cross-section. The analytical method used is a modification of a method of solution for the flow about axisymmetric bodies in close proximity at zero angle of attack. As a demonstration of this method, the flows about one, two and three finless M-117 bomb shapes were investigated. Theoretical pressure distributions are presented for the two and three body cases. For the three body case, experimental data is available; however, there is poor agreement with data thought primarily to be because of flow separation along the tails of the bombs. A non-axisymmetric modification of the M-117 bomb shape was developed in order to simulate the flow separation. The analytical results of this effort are compared with the experimental data. (Author)

AD-B017 944/0 PC **A06**/MF **A01**
Air Force Flight Dynamics Lab., Wright-Patterson AFB, OH.
A Finite Element Mach Box Procedure for Flutter Predictions of Panels in Three-Dimensional Supersonic Unsteady Potential Flow.
Final rept. Jun-Dec 76,
T. Y. Yang. Dec 76, 103p Rept no. AFFDL-TR-76-161
Distribution limitation now removed.

A finite element formulation and solution procedure are developed for flutter predictions of rectangular panels with one surface exposed to three-dimensional supersonic unsteady potential flow. The effect of in-plane force is included. Each element is divided into several Mach boxes. The aerodynamic influence coefficients between each pair of sending and receiving boxes are computed by the method of Gaussian quadrature. The aerodynamic matrix is based on the numerically computed velocity potentials for all boxes.

AD-894 188/2 PC **A18**/MF **A01**
Boeing Co., Renton, WA. Commercial Airplane Group.
Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
Final technical rept. Dec 69-Apr 71,
Gordon D. Kramer, and George E. Keylon. Mar 72, 401p D6-24860-Pt-2, AFFDL-TR-71-108-Pt-2
Contract F33615-70-C-1126
See also AD-893 334L.
Distribution limitation now removed.

The Mach box technique for unsteady aerodynamic loadings has been extended to include wing and tail with dihedral angles and vertical separation. A digital computer program, written in FORTRAN, is presented. The program provides for up to nine sweep angles of the leading and trailing edges of edges of each surface. First order position theory thickness correction is available as an option and two refinement procedures are provided, subdivision with averaging and velocity potential smoothing. For a maximum of twenty oscillatory mode shapes the program calculates normal washes, velocity potentials, lifts, pressures and generalized forces matrices. If only one surface is being analyzed, sampling of wake up-wash, side-wash and longitudinal wash is available.

AD-904 665/7 PC **A12**/MF **A01**
Boeing Vertol Co., Philadelphia, PA.
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
Final rept. Feb 71-Feb 72,
A. K. Amos, and F. J. Tarzanin. Sep 72, 263p D210-10464-3, AFFDL-TR-72-40-Vol-3
Contract F33615-71-C-1310
See also Volume 2, AD-904 089L.
Distribution limitation now removed.

This report provides user's instructions for two computer programs for aeroelastic stability analysis and for aeroelastic prop/rotor loads analysis. Each program is carefully described and explained, symbols and sign conventions are identified, and input and output data are presented. A sample program run for each analysis is then given. In addition, sample programs for some subroutines are provided. Notes and suggestions on program usage are presented. The methods contained in this report are intended to be used by designers to calculate with improved accuracy, the dynamic and aeroelastic response characteristics of rotor powered V/STOL aircraft. The essential new feature of these methods is that the coupled flap-pitch-lag blade deflections are taken into account. These calculations are essential if a high level of confidence is to be had in the results.

PB81-122269 PC **A07**/MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.
A Green-Function Method for Wave Interaction with a Submerged Body,
Wataru Kioka. Apr 80, 144p UCB/EERC-80/11, NSF/RA-800197
Grant NSF-PFR77-20667

A numerical method for solving boundary-value problems related to potential flows with a free surface is presented. The method determines the hydrodynamic forces exerted on a rigid body oscillating in its six degrees of freedom under a free surface as well as the forces resulting from the wave interaction of the body held fixed. The linearized problem is first formulated for a three-dimensional body of general shape in water of finite depth. Application of Green's third identity, using the Green function that satisfies the free-surface, bottom and radiation conditions, reduces the problem to the solution of an integral equation with the unknown function being the velocity potential over the body surface. The integral equation is solved numerically by means of a finite-element technique consisting of triangular elements. An approximate Green function which is valid for the case of a relatively deep water is also presented. The numerical procedure is outlined in detail for the bodies fully submerged under the free surface. Test computations were carried out for a sphere, an ellipsoid and circular cylinder. Agreement with results obtained by others is generally very good. The approximate Green function produces accurate results for many practical situations with less computer time required for numerical evaluations.

PB81-122343 PC **A08**/MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.

Hydrodynamic Pressure and Added Mass for Axisymmetric Bodies,
Fukij Nilrat. May 80, 174p UCB/EERC-80/12
Contract NOAA-04-6-158-44110
Prepared in cooperation with California Univ., San Diego, La Jolla. Sea Grant Coll. Program.

An effective finite element method for determining the hydrodynamic pressure distribution on rigid axisymmetric bodies oscillating in a fluid is presented. The bodies considered are symmetric about a vertical axis; and they can be either totally or partially submerged. To reduced computational effort, a transmitting boundary is used to truncate the horizontal unbounded fluid domain. The formulation of added masses in the equations of motion of rigid bodies in fluid is presented. A computer program is developed which calculates pressure distributions and added masses for axisymmetric bodies oscillating at a specified frequency in the horizontal, vertical and rotational directions. The results of the finite element analysis are compared with experimental results showing good comparisons in most cases. The effects of compressibility of fluid and surface waves generated by oscillating bodies are also studied. Surface waves are found to have an effect on the added mass and hydrodynamic damping at low frequency while compressibility of the fluid has a significant effect at high frequency for cases involving large fluid depths.

PB81-855447 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Laminar Flow of Fluids in Pipes. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jun 74-May 80,
Walter Van Put. Jun 80, 155p NERACIAANT0655
Sponsored by National Technical Information Service, Springfield, VA.

The citations cover studies of laminar flow in metal pipes and tubes, using Newtonian, non-Newtonian, supercritical and immiscible fluids. Laminar flow studies performed on heat pipes and heat exchangers are also included. (Contains 157 citations.)

20E. Masers and Lasers

AD-A091 883/9 PC **A03**/MF **A01**
Army Missile Command, Redstone Arsenal, AL. Directed Energy Directorate.
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
Technical rept.,
Dennis R. Womack, and Thomas G. Miller. 25 Feb 80, 33p DRSMI/RH-80-3-TR, AD-E950 036

Two experiments are described which use a different approach to nuclear pumped lasers. Gamma-rays will be used to attempt lasing on the C yields A transition in the XeF excimer. One experiment will use the gamma-rays to directly pump a high pressure laser mixture, and the other experiment will use gamma-rays to create photons which will in turn photolytically pump a XeF2 laser mixture. Cell design is described and first-order energy deposition calculations are presented. Predicted energy outputs from half-liter laser cells are 17.0 J for the photolytic experiment, and 1.0 J for the direct gamma experiment.

AD-A091 903/5 PC **A05**/MF **A01**
United Technologies Research Center, East Hartford, CT.
Investigation of Plasma Processes in Electronic Transition Lasers.
Technical rept. 1 Nov 79-1 Nov 80,
William L. Nighan. 1 Nov 80, 78p Rept no. UTRC/R80-922617-5
Contract N00014-76-C-0847

This report describes the essential features of electron-beam controlled discharges of the type common to rare gas halide and mercury-halide lasers. Particular attention is directed toward the XeCl (308 nm) laser using HCl as the halogen donor, and the HgBr(502 nm) laser using HgBr2. The basic kinetic processes controlling the behavior of these lasers are discussed, with special emphasis on electron collisions with HCl and HgBr2, respectively. (Author)

AD-A092 044/7 Not available NTIS
Army Electronics Research and Development Command, Fort Monmouth, NJ. Night Vision and Electro-Optics Labs.
A Double-Ended, Unstable Resonator Submillimeter Laser,
T. F. Ewanizky, W. T. Bayha, and R. S. Rohde. 25 Jan 79, 3p
Availability: Pub. in IEEE Jnl. of Quantum Electronics, vQE-15 n7 p538-540 Jul 79 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 053/8 Not available NTIS
Defence Research Establishment Valcartier (Quebec).
Frequency-Stabilized Hybrid CO2 Laser,
Paul Pace, and James Cruickshank. 1980, 8p DRB-REPRINT-4255
Availability: Pub. in Proceedings of the Society of Photo-Optical Instrumentation Engineers, v227 p27-34, 10-11 Apr 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 097/5 PC **A03**/MF **A01**
Foreign Technology Div., Wright-Patterson AFB, OH.
A 20 Years' Survey of Laser Science and Technology in China. II,
Ji Zhong, and Qun Li. 22 Oct 80, 44p Rept no. FTD-ID(RS)T-1190-80
Edited trans. of Laser Journal (China) v7 n2 p1-13 Feb 80. See also AD-A091 457.

No abstract available.

AD-A092 212/0 PC **A03**/MF **A01**
SRI International, Arlington, VA.
Theory of the Transverse Gradient Wiggler.
Technical rept.,
Norman M. Kroll, Philip Morton, and Marshall N. Rosenbluth. Sep 80, 46p Rept no. SRI-JSR-80-22
Contract MDA903-78-C-0086, ARPA Order-2504

The use of a free electron laser (FEL) with a transverse field gradient was proposed to prevent the energy spreading and determining which saturates the ordinary FEL. The basic idea is that the transverse field gradient acts as a spectrometer so that as an electron's energy charges due to interaction with radiation it is focused to a different transverse position. One then arranges the transverse field gradient so that the resonance condition remains satisfied at all transverse positions. We will concentrate on the possibility of obtaining high extraction from such a magnet.

AD-A092 502/4 PC **A03**/MF **A01**
Harry Diamond Labs., Adelphi, MD.
Unstable-Resonator and Output-Coupling Design Study for Diffraction Radiation Generator Near-Millimeter Sources.
Technical rept.,
Colin S. Willett. Oct 80, 26p Rept no. HDL-TR-1936

Configurations of unstable resonators that could be used for diffraction radiation generators (DRG's) are presented. The output coupling of a negative branch unstable resonator exhibits an extreme sensitivity to mirror radius and appears to be unsuited to DRG use. The positive branch resonator does not exhibit this sensitivity to mirror radius, and the mirror radii that are needed to give diffraction output couplings of a few percent are practical. (Author)

AD-B015 026/8 PC **A04**/MF **A01**
United Technologies Research Center, East Hartford, CT.
Three to Five Micron VET Laser Investigation.
Final rept. 2 Jan-31 Dec 75,
John A. Shirley. Sep 76, 58p UTRC-R75-952051-13, AFAL-TR-76-57
Contract F33615-75-C-1047
Distribution limitation now removed.

The objective of this investigation is to develop and demonstrate the technology necessary to design a practical airborne molecular vibration-vibration energy transfer laser operating in the 3 to 5 micrometers spectral range with an output of 10-100 watts. The deuterium-donor/hydrogen chloride-acceptor system has been selected as the most promising transfer system in the given spectral region. Spectroscopic measurements have been made in flowing HCl vibrationally excited by transfer from deuterium excited in a self-sustained dc electric discharge. The medium is characterized by a vibrational temperature, which is T sub V = 1440-1960 K and rotational temperature, which is T sub V = 240-325 K immediately after mixing and transfer. Donor gas excitation determined by Raman scattering in the hydrogen isotope corresponds to T sub V = 900-1350 K. Calorimetric measurements of electric discharge heat losses have confirmed the relatively low level of discharge vibrational excitation. Attempts to determine post discharge dissociation have been negative. (Author)

AD-B032 525/8 PC **A03**/MF **A01**
Naval Weapons Center, China Lake, CA.
Laser Safety Computer Program.
Final rept. for fiscal year 1978.
Kenneth B. LaBaw, and Robert T. Hintz. Sep 78, 27p NWC-TP-6054, GIDEP-E140-1053
Distribution limitation now removed.

The increasing use and development of laser systems in the Navy require careful attention to laser safety. The first step in achieving safe laser operation is to analyze the system accurately. The Laser Safety Computer Program described in this report accurately evaluates all laser sources over a wide range of conditions. The computer program is a self-consistent interpretation of the American National Standard for the Safe Use of Lasers (ANSI Z-136.1-1976).

AD-B036 761/5 PC **A08**/MF **A01**
Illinois Univ. at Urbana-Champaign. Dept. of Electrical Engineering.
Near Infrared Gas Lasers.
Final rept. 1 Mar 76-30 Sep 78,
S. A. Lawton, and T. A. DeTemple. Dec 78, 164p AFAPL-TR-78-107
Contract F33615-76-C-2089
Distribution limitation now removed.

The near infrared laser emission from Xe in Ar and He mixtures has been investigated experimentally, in a ionizer-sustainer mode, and theoretically. An efficiency of 1.3% has been achieved from Ar:Xe, 150:1, at 1900 torr with approximately 75% of the output occurring on a single line at 1.73 microns; the efficiency for He:Xe being approximately a factor-of-ten lower with the dominant emission at 2.03 microns and 3.43 microns. Based on a detailed kinetic study of the discharge, the strong laser emission in Ar:Xe is attributed to a two-stage excitation in which a large excited state population is created during the first portion of the discharge followed by excitation and ionization of these excited states with subsequent strong lasing during the remaining, low field, portion. The He:Xe mixtures appear dominated by dissociative recombination pumping. The desired high Ar pressure is explained on the basis of providing an impedance match to the sustainer circuit and because the elastic (momentum) losses, at low fields (E/N) are nominal allowing a small excited state density to dominate the fractional loss spectra.

AD-918 880/6 PC **A04**/MF **A01**
IBM Federal Systems Div., Gaithersburg, MD.
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
Final rept. 2 Apr-16 Nov 73,
Edmund D. Ludwig, and Steven Eros. Mar 74, 70p AFAL-TR-74-32
Contract F33615-73-C-1240
Distribution limitation now removed.

The Phase I effort was directed toward verification of cryogenic laser diode optic technology for optical throughputs of more than one watt average power per fiber. In the test model, 17 diode module/fiber units out of a complement of 28 were operated simultaneously; the bundled fibers formed a 60 by 80 mil source which emitted 21 watts at 9 per cent duty factor through an f 1.6 opti-

cal system. The test model circular array configuration imposes disadvantages during fabrication which prevents successful operation of the full complement of module/fiber units. The Phase II task consisted of design studies and experiments to evolve a linear laser diode fiber optic array. An electrical analog model of the array thermal resistance path was constructed to experimentally solve the three-dimensional heat flow problem. A Gallium-Indium eutectic solder which is a liquid at room temperature was developed to provide a high conductivity interface material. Conceptual array designs were examined for modularity, ease of fabrication, and repairability. Sub-array tests using extruded optical quality fibers indicated potential fiber melting due to the insulating vacuum surrounding the array. A theoretical analysis of fiber cooling using a nitrogen gas filled array chamber showed a marked advantage for gas-cooled fibers. The proposed final design is a linear, modular array using equal length metalized fibers in a gas-filled chamber. The source size is 66 x 66 mils using 30 diode/fiber units on 15 modules. (Author)

AD-919 850/8 PC **A08**/MF **A01**
United Aircraft Research Labs East Hartford Conn
Ruggedized CO2 Packaged Laser.
Final technical rept. May 70-Oct 73,
C. J. Buczek, R. J. Freiberg, R. J. Chouinard, R. J. Wayne, and M. L. Skolnick. Apr 74, 162p
AFAL-TR-74-110
Contract F33615-70-C-1481
Distribution limitation now removed.

The concepts and operational characteristics of cw laser injection locking to achieve compact, efficient, frequency stable CO2 transmitters are discussed. The basic physical phenomena involved and the role of gain saturation in laser injection locking are explored analytically by means of appropriate lower frequency and microwave circuits. Experimental results with a variety of regenerative and injection-locked CO2 amplifiers are presented and compared with the analytical predictions. To demonstrate the potential of the injection-locking technique, a 60 W sealed-off CO2 laser was locked in frequency to a 0.5 W stable oscillator. The experimental data are in close agreement with theory. A master-oscillator injection-locked transmitter for frequency stable operation was designed and tested. This experimental prototype design which was built to evaluate various concepts to be employed in a ruggedized frequency stable transmitter is described. A CO2 design suitable for frequency stable operation at 50 W, life tests with various metal-ceramic master-oscillator and amplifier discharge tubes and air-cooled operation are also discussed.

DOE/DP/40096-1 PC **A03**/MF **A01**
Hoya Corp., Tokyo (Japan).
Investigation on the Damage Threshold of Films Coated on Various Silicate, Fluorophosphate and Phosphate Laser Glasses. Final Report, January 1, 1979-August 29, 1980.
Y. Nakajima, and T. Izumitani. 1980, 27p
Contract AC08-79DP40096

Effects of substrate laser glass on the damage threshold and adhesion of dielectric films has been studied in order to improve the damage threshold. The study is divided into two parts: the first part dealing with four types of laser glass, LSG-91H silicate, LHG-8 phosphate, P-1 phosphate and LHG-10 fluorophosphate; the second part dealing with twenty-six glasses with systematically modified compositions in three glass systems, silicate, phosphate and fluorophosphate. (ERA citation 06:001201)

INIS-mf-5653 PC **A03**/MF **A01**
Universidade Estadual de Campinas (Brazil). Inst. de Fisica.
Laser Modes as an Eigenfunction of an Operator Equation.
J. E. Ripper, M. D. Campos, and M. A. A. Pudensi. 29p
U.S. Sales Only.

A new method is proposed of arriving to an approximate solution into mode problems which cannot be treated by the traditional methods. Basically the idea is to treat the laser mode as an eigenfunction of an operator equation so that the mathematical methods developed to treat the wave equations in quantum mechanics can be used as tools to solve the equation. (Atomindex citation 11:519421)

20F. Optics

AD-A092 004/1 PC **A02**/MF **A01**
Rome Air Development Center, Hanscom AFB, MA. Deputy for Electronic Technology.
Some Physical Insights into Beam Propagation in Strong Turbulence,
Ronald L. Fante. 18 Jan 80, 7p Rept no. RADC/ETR-80-0030
Pub. in Radio Science, v15 n4 p757-762 Jul-Aug 80.

No abstract available.

AD-A092 005/8 PC **A02**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment,
E. P. Shettle, F. X. Kneizys, and W. O. Gallery. 23 Jun 80, 3p Rept no. AFGL-TR-80-0322
Pub. in Applied Optics, v19 n17 p2873, 1 Sep 80.

No abstract available.

AD-A092 051/2 Not available NTIS
Defence Research Establishment Valcartier (Quebec).
Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions,
W. G. Tam, and A. Zardecki. 29 Feb 80, 7p DRB-REPRINT-4256
Availability: Pub. in Applied Optics, v19 n16 p2822-2827, 15 Aug 80 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 127/0 PC **A02**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Overwater Optical Scintillation Measurements during MAGAT-1980.
Technical rept.,
E. C. Crittenden, Jr., E. A. Milne, A. W. Cooper, G. W. Rodeback, and S. H. Kalmbach. Aug 80, 18p Rept no. NPS-61-80-018

Overwater measurements have been made of the turbulence structure constant for index of refraction, C sub n squared, by means of scintillation for comparison with predictions of C sub n squared based on meteorological measurements carried out at the same time, during the 'Monterey Aerosol Generation and Transport' (MAGAT-1980) experiment. Scintillation was chosen as the optical measurement because it gives heaviest weight to points on the optical path near the center of the path, minimizing the shoreline effects. The overwater path length was 13.3 km. The light source was a 10.6 micrometer CO2 laser. This combination of range and wavelength was adequate to avoid saturation effects.

AD-A092 264/1 PC **A10**/MF **A01**
Scientific Research Center, Santa Monica, CA.
Theoretical Studies of Low-Loss Optical Fibers.
Final rept. 28 Sep 79-15 Sep 80,
M. Sparks, W. Fredericks, D. Mills, and R. Warren. 15 Sep 80, 217p
Contract N00173-79-C-0361

Extrinsic scattering coefficients (with values as great as 1 to 100 dB/m for any one of seven scattering processes) and extrinsic absorption coefficients beta sub ab (with impurity concentrations of either isolated impurity ions or molecules, or macroscopic inclusions as low as 0.001 to 0.0001 parts per billion giving beta sub ab = 0.01 dB/km) must be greatly reduced in order to attain an extinction coefficient beta sub ex = 0.01 dB/km = 2 x 10 to the minus 8th power/cm, which is extremely low, but is a fairly modest goal for low-loss fibers. There are only a few candidate glasses, and current fabrication techniques of crystalline fibers give extinction as great as five orders of magnitude greater than 0.01 dB/km. Attaining, maintaining, and even measuring the high purity in both crystals and glasses is expected to be difficult. Impurity-absorption spectra and peak-absorption wavelengths of both infrared and visible/ultraviolet absorption are tabulated for use in identifying troublesome impurities. Experimental absorption coefficients in the infrared region are tabulated to establish the state of the art. Single-crystal alkali halides may be rendered useless as low-loss fiber materials by surface imperfections (steps) and fracture, both induced by bending. Plots in intrinsic-scattering and absorption-coefficients, the so called V curves are useful in establishing the wavelength region in which intrinsic loss is negligible.

AD-A092 315/1 PC **A06**/MF **A01**
IIT Research Inst., Chicago, IL.
Failure Rates for Fiber Optic Assemblies.
Final technical rept. Jun 79-Aug 80,
Steven Flint. Oct 80, 110p RADC-TR-80-322
Contract F30602-79-C-0161

This report presents updated reliability prediction models for those components used in fiber optic assemblies. Device types considered include light emitting diodes (LEDs), light emitting diode (LED) displays, laser diodes, phototransistors, photodiodes, optically coupled isolators, fiber optic cables and fiber optic connectors. The reliability prediction models are presented in a form compatible with the existing models of MIL-HDBK-271C. (Author)

AD-B009 489/6 PC **A09**/MF **A01**
Spectronics, Inc., Richardson, TX.
Optical Couplers.
Interim technical rept. Oct 73-Jun 74,
James R. Biard, and John E. Shaunfield. Dec 75, 181p AFAL-TR-74-314
Contract F33615-74-C-1001
Distribution limitation now removed.

This document is an interim report describing the development of optical couplers for use in an eight station EMI/EMP resistant avionic data bus being developed on this program. Airborne avionics systems are moving toward the use of party line multiplex data buses for the transmission of the growing number of digital signals found in modern aircraft. Optoelectronic technology provides a data bus interface system consistent with military requirements that is potentially superior to wire techniques--particularly in the areas of ground loop noise immunity and EMI/EMP sensitivity. Passive optical directional couplers are required in an optoelectronic data bus so that each station can receive optical signals from the bus and transmit optical signals onto the bus. By this means, each station on the bus can communicate with every other station. The report identifies the basic optical loss and attenuation mechanisms that affect the quality of optical couplers and describes the techniques developed to minimize these losses. Since low-loss fiber optic bundle terminations are required at all optical interfaces, this topic is discussed separately. Conventional termiantions are described which have losses of 34.8%; compression techniques are described that reduce the loss to 24.4%.

UCRL-15285 PC **A02**/MF **A01**
Owens-Illinois, Inc., Toledo, OH. Corporate Technology Div.
AR Film on Phase-Separated Glass. Final Report, January 1979-April 1980.
T. S. Hahs. 29 Sep 80, 9p
Contract W-7405-ENG-48

Etching a phase-separated glass can produce a surface film with low refractive index that increases gradually to the bulk value. This report demonstrates that such a graded index can be produced on optical quality glass for use with intense pulses of energy at 1.06 mu m. The film reduces reflections and raises the threshold against damage of the surface by the transmitted energy. (ERA citation 06:001731)

20G. Particle Accelerators

ANL-PHY-79-2(Rev.1) PC **A05**/MF **A01**
Argonne National Lab., IL.
Study of a National 2-GeV Continuous Beam Electron Accelerator.
Y. Cho, R. J. Holt, H. E. Jackson, T. K. Khoe, and G. S. Mavrogenes. Aug 80, 76p
Contract W-31-109-ENG-38

Current trends in research in medium energy physics with electromagnetic probes are reviewed briefly and design objectives are proposed for a continuous beam 2 GeV electron accelerator. Various types of accelerator systems are discussed and exploratory designs developed for two concepts, the linac-stretcher ring and a double-sided microtron system. Preliminary cost estimates indicate that a linac-ring system which meets all the design objectives with the exception of beam quality and uses state-of-the-art technology can be built for approximately $29 million. However, the double-sided microtron shows promise for development into a substantially less expensive facility meeting all design objectives. Its technical feasibility remains to be established. Specific areas requiring additional engineering studies are discussed, and current efforts at Argonne and elsewhere are identified. (ERA citation 06:001251)

BNL-28292 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Pumping Behavior of Sputter Ion Pumps.
T. S. Chou, and D. McCafferty. 15p CONF-801037-16
Contract AC02-76CH00016
American Vacuum Society conference, Detroit, MI, USA, 13 Oct 1980.

The ultrahigh vacuum requirements of ISABELLE is obtained by distributed pumping stations. Each pumping station consists of 1000 l/s titanium sublimation pump for active gases (N sub 2 , H sub 2 , O sub 2 , CO, etc.), and a 20 l/s sputter ion pump for inert gases (methane, noble gases like He, etc.). The combination of the alarming production rate of methane from titanium sublimation pumps (TSP) and the decreasing pumping speed of sputter ion pumps (SIP) in the ultrahigh vacuum region (UHV) leads us to investigate this problem. In this paper, we first describe the essential physics and chemistry of the SIP in a very clean condition, followed by a discussion of our measuring techniques. Finally measured methane, argon and helium pumping speeds are presented for three different ion pumps in the range of 10 exp -6 to 10 exp -11 Torr. The virtues of the best pump are also discussed. (ERA citation 06:001264)

BNL-28323 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Acceleration of Polarized Proton at the AGS.
Y. Y. Lee. 1980, 3p CONF-800994-1
Contract AC02-76CH00016
International symposium on H.E. physics with polarized beams and polarized targets, Lausanne, Switzerland, 25 Sep 1980.

The unexpected importance of high energy spin effects and the success of the ZGS in correcting many intrinsic and imperfection depolarizing resonances led us to attempt to accelerate polarized protons in the AGS. A collaborative effort is underway by the groups in Argonne, Michigan, Rice, Yale and Brookhaven to improve and modify the AGS to accelerate polarized protons. With the appropriate funding the first polarized proton acceleration at the AGS should be possible by 1983. (ERA citation 06:001244)

DOE/ER/01388-457 PC **A02**/MF **A01**
Washington Univ., Seattle.
Production of Optically Thin Free-Standing Oil Films from the Edge of a Rotating Disc.
J. G. Cramer, D. F. Burch, R. Rodenberg, and P. B. Cramer. 1980, 12p
Contract AC06-76ER01388

A method is described for forming thin free-standing oil films which are spun from the edge of a sharp-edged rotating disc. The films can be made thin enough to show strong optical interference colors when viewed in white light. The thinnest films have areal densities down to about 10 to 20 mu gm/cm exp 2 . A stable roughly triangular film with an area of about 10 cm exp 2 and fairly uniform thickness can be readily produced. Much larger films having either greater thickness or less stability are also possible. Films have been produced both in air and in vacuum. (ERA citation 06:001254)

LBL-10301 PC **A23**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Proceedings of the Heavy Ion Fusion Workshop.
W. B. Herrmannsfeldt. Sep 80, 526p CONF-7910122-, SLAC-PUB-2575
Contracts W-7405-ENG-48, AC03-76SF0051
Heavy ion fusion workshop, Berkeley, CA, USA, 29 Oct 1979.

Separate abstracts were prepared for 35 of the included papers. Abstracts for 9 of the remaining papers appeared earlier in ERA. Two of the included papers were title listed only. (ERA citation 05:038570)

PB81-851040 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Cyclotrons. January, 1970-October, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 206p
NERACUSGNT1622
Sponsored by National Technical Information Service, Springfield, VA.

The bibliography covers studies, design, testing, and applications of cyclotrons for accelerating protons, deuterons and ions. Studies of cyclotron resonance, emission measurements, and applications to medicine are also included. (Contains 200 citations.)

PB81-851057 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Cyclotrons. January, 1976-October, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Oct 80,
Walter Van Put. Oct 80, 195p
NERACEDBNT1622
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covers studies, design, testing, and applications of cyclotrons for accelerating protons, deuterons and ions. Studies of cyclotron resonance, emission measurements, and applications to medicine are also included. (Contains 200 citations.)

PB81-851065 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Cyclotrons. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
Rept. for Jan 70-Oct 80,
Walter Van Put. Oct 80, 199p NERACEI NT1622
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covers studies, design, testing, and applications of cyclotrons for accelerating protons, deuterons and ions. Studies of cyclotron resonance, emission measurements, and applications to medicine are also included. (Contains 200 citations.)

PB81-851073 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Cyclotrons. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Oct 80,
Walter Van Put. Oct 80, 160p NERACIAANT1622
Sponsored by National Technical Information Service, Springfield, VA.

Worldwide information covers studies, design, testing, and applications of cyclotrons for accelerating protons, deuterons and ions. Studies of cyclotron resonance, emission measurements, and applications to medicine are also included. (Contains 200 citations.)

SLAC-PUB-2621 PC **A02**/MF **A01**
Stanford Linear Accelerator Center, CA.
High Intensity Polarized Electron Sources.
C. K. Sinclair. Oct 80, 14p CONF-800994-2
Contract AC03-76SF00515
International symposium on H.E. physics with polarized beams and polarized targets, Lausanne, Switzerland, 25 Sep 1980.

The status of the polarized electron source development program at SLAC will be reviewed. Emission currents of 60 A, corresponding to a space charge limited current density of 180 A/cm exp 2 , have been obtained from GaAs photocathodes. Electron beam polarization 20% greater than that obtainable from GaAs cathodes has been observed from multilayer GaAs-GaAlAs structures. Work in progress to produce high beam polarization from II-IV-V sub 2 chalcopyrite photocathodes will also be described. (ERA citation 06:001250)

SLAC-229 PC **A09**/MF **A01**
Stanford Linear Accelerator Center, CA.
SLAC Linear Collider Conceptual Design Report.
Jun 80, 198p
Contract AC03-76SF00515

The linear collider system is described in detail, including the transport system, the collider lattice, final focusing system, positron production, beam damping and compression, high current electron source, instrumentation and control, and the beam luminosity. The experimental facilities and the experimental uses are discussed along with the construction schedule and estimated costs. Appendices include a discussion of space charge effects in the linear accelerator, emittance growth in the collider, the final focus system, beam-beam instabilities and pinch effects, and detector backgrounds. (ERA citation 06:001261)

20H. Particle Physics

AD-A092 306/0 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA
Measurement of Pumped Superluminal Electromagnetic Radiation.
Master's thesis,
William More Decker, IV , and Joseph Paul Mackin. Jun 80, 66p

A new source of radiation has been postulated that occurs when a charged particle, moving with a velocity greater than the velocity of light in a medium, is caused to oscillate about its transverse beam line by means of a static, periodic magnetic or electric field or by means of an incident transverse wave. Experiments were conducted to measure this new source of electromagnetic shock radiation, and compare it to Cerenkov radiation, a known source of electromagnetic shock radiation. The preliminary results agree with predictions of Schneider and Spitzer, but the present accuracy is not sufficient to rule out alternative theories. (Author)

AEEW-M-1663 PC **A02**/MF **A01**
UKAEA, Winfrith (England). Atomic Energy Establishment.
Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
W. H. Taylor, M. F. Murphy, and M. R. March. May 79, 19p
U.S. Sales Only.

The uncertainties in determining the absolute values of the Rh-103(n, n') Rh-103m reaction rate (which is widely used as a neutron damage flux monitor) have been reduced to approximately +- 5%. This has been achieved with the use of a calibrated source of Pd-103-Rh-103m activity supplied by the IAEA. Agreement to within 3% between measured and calculated values of the reaction rate (normalised to the U-238 fission rate) has been achieved. (Atomindex citation 11:524573)

BNL-NCS-50496(Ed.2) PC **A24**/MF **A01**
Brookhaven National Lab., Upton, NY.
Data Formats and Procedures for the Evaluated Nuclear Data File, ENDF.
R. Kinsey. Oct 79, 571p

Contract AC02-76CH00016

These revisions to Data Formats and Procedures for the ENDF Neutron Cross Section Library, ENDF-102, pertain to the latest version of ENDF/B-V. The descriptions of the formats are brought up to date, and important procedural matters are explained. (ERA citation 06:001540)

BNL-NCS-51184 PC **A04**/MF **A01**
Brookhaven National Lab., Upton, NY.
Evaluation of exp 235 U Neutron Cross Section and gamma Ray Production Data for ENDF/B-V.
M. R. Bhat. Mar 80, 71p ENDF-248
Contract AC02-76CH00016

A discussion is given of the evaluation of neutron and gamma ray production cross sections of exp 235 U from 10 exp -5 eV to 20 MeV and the parts contributed by the author. All available new data are included in this evaluation, and the procedures adopted to assess the experimental data and adopt a set of recommended values are described. 22 figures, 10 tables. (ERA citation 05:039068)

BNL-28305 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Unique Parity States in exp 109 Pd as a Test of Particle-Rotor and IBFA Models.
R. F. Casten. 1980, 5p CONF-8006127-2
Contract AC02-76CH00016
International conference on interacting bose-fermi systems in nuclei, Erice, Sicily, Italy, 12 Jun 1980.

Calculations were performed for anti-aligned levels in exp 109 Pd. For a Nilsson model with pairing, variable moment of inertia, and Coriolis coupling, the favored levels were well reproduced, but the low-spin unfavored states exhibited serious disagreement with experiment results. Calculations with the IBFA were a significant improvement, in particular a regards the splitting of states of common spin. Comments on the source of this improvement are offered. 2 figures, 1 table. (ERA citation 06:001575)

BNL-28353 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Search for Narrow Anti Pp States in the Reaction pi exp - p implies p pi exp - Anti Pp at 16 GeV/C.
S. U. Chung, A. Etkin, and R. Fernow. 1980, 18p CONF-8004102-6
Contract AC02-76CH00016
International conference on experimental meson spectroscopy, Upton, NY, USA, 25 Apr 1980.

A sensitive (greater than or equal to 5 events/nb) search for narrow anti pp states was carried out at the BNL Multiparticle Spectrometer. No evidence of narrow anti pp states was found at 2020 and 2200 MeV in the reaction pi exp - p implies p pi exp - anti pp at 16 GeV/c. 2 sigma upper limits of less than or equal to 3 nb are quoted for these states in the data. Based on the cross sections of the CERN omega experiment at 12 GeV/c and assuming baryon-exchange processes for the production, greater than or equal to 5 sigma signals should have been seen at 2020 and 2200 MeV. (ERA citation 06:001474)

BNL-28357 PC **A02**/MF **A01**
Brookhaven National Lab., Upton, NY.
Problem of Phase Transitions in Nuclear Structure.
G. Scharff-Goldhaber. 1980, 9p CONF-8006127-1
Contract AC02-76CH00016
International conference on interacting bose-fermi systems in nuclei, Erice, Sicily, Italy, 12 Jun 1980.

Phase transitions between rotational and vibrational nuclei are discussed from the point of view of the variable moment of inertia model. A three-dimensional plot of the ground-state moments of inertia of even-even nuclei vs N and Z is shown. 3 figures. (ERA citation 05:039083)

BUP-104 PC **A03**/MF **A01**
Bergen Univ. (Norway). Fysisk Inst.
Form Factor and Multistep-Transfer Effects in Light-Ion and Heavy-Ion Induced Transfer Reactions on Rotational and Transitional Nuclei.
J. S. Vaagen. 1977, 45p
U.S. Sales Only.

Multistep transfer processes, proceeding through inelastic excitation of the colliding fragments, or through sequential particle transfer, are still direct in the sense that their time scale is much smaller than the typical time for compound reactions. Two-nucleon and one-nucleon transfer reactions are here discussed theoretically, and examples of such processes induced by light-ion and heavy-ion reactions on rotational and transitional nuclei of rare earth elements and tungsten are given. (Atomindex citation 11:516241)

CEA-CONF-4753 PC **A02**/MF **A01**
CEA Centre d'Etudes Nucleaires de Saclay, Gif-sur-Yvette (France). Dept. de Physique Nucleaire.
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
G. Tamas. 1979, 14p CONF-7906175-1
International school of intermediate energy nuclear physics, Ariccia, Italy, 18 Jun 1979.
U.S. Sales Only.

The gamma D implies p+p+ pi exp - and the gamma exp 4 He implies p+ pi +3 nucleons reactions in the energy region of the delta resonance are studied. As a temporary conclusion, it is possible to explain the largest part of the photon-nucleus interaction for D and exp 4 He in the delta resonance region by the quasi-free production and the pion and proton rescattering. (Atomindex citation 11:524571)

CEGB-RD/B/N-4667 PC **A04**/MF **A01**
Central Electricity Generating Board, Berkeley (England). Berkeley Nuclear Labs.
Exp 235 U Fission Product gamma Spectra: A Comparison Between Experiment and Calculation.
A. Tobias. Oct 79, 70p
U.S. Sales Only.

Recent measurements of exp 235 U fission product gamma spectra (ORNL), after reduction to a broad group structure, were compared with results of corresponding summation calculations which were made with the UKFPDD-1 fission product data base. In order to facilitate convenient integration of the summation results, weighted sums of decaying exponentials were accurately fitted to them using an iterative least-squares method described. The comparisons between experiment and calculation reveal significant deficiencies in data for short-lived nuclides which prevent the accurate calculation of short-term (< approximately 100s) gamma spectra by means of summation calculations. Simple rescaling of these summation results is found to be unsatisfactory. Discrepancies between experiment and calculation for gamma energies > 5 MeV are also examined briefly and possible causes for them are discussed. (Atomindex citation 11:524577)

CENBG-7809 PC **A06**/MF **A01**
Bordeaux-1 Univ., Gradignan (France). Centre d'Etudes Nucleaires.
Dynamical Aspect of Fission Mechanism. Study of the exp 237 Np(N,F) Reaction Induced by Neutron Energies Between 0.5 and 1.75MeV.
These (3e Cycle),
R. Ruiz. 1978, 108p
In French.
U.S. Sales Only.

During the transition from the saddle-point to the scission point, a fraction of the potential energy of the fissioning nucleus is made available. The sharing out of this energy between the various degrees of freedom is tributary of the importance of the nuclear viscosity. The study of the correlations between the fission fragment total kinetic energy and the excitation energy of the fissioning nucleus yields information about the dynamical aspect of the fission process (adiabatic or viscous). Thus, we have measured the kinetic energies and the difference in time of flight of the fragments produced in the neutron-induced fission of Np exp 238 for neutron energies of 0.5, 0.75, 1.0, 1.25 and 1.75 MeV. From the data analysis, event by event, we deduced the energy and mass distributions as well as the total kinetic energy distribution of the fragments, as also their mean values and their mean quadratic deviations. In the energy range covered, the total kinetic energy of the fission fragments versus the nucleus excitations energy is given by TKE =(0.463+-0.293).E*+(164.504+-0.324), which suggests that during the fission process the elongation phase of the nucleus is neither purely adiabatic nor completely viscous. This invalidates, at least in the case of odd-odd nuclei, the predictions of J.R. NIX concerning the adiabatic character of the transition from the saddle point to the scission point. (Atomindex citation 11:524537)

CENBG-7919 PC **A07**/MF **A01**
Bordeaux-1 Univ., Gradignan (France). Centre d'Etudes Nucleaires.
Analysis of a Quasi-Molecular Type Dissociation Involving Three Charged Fragments. Observation and Discussion of the Production of alpha Particles at Rest from the exp 12 C- alpha - exp 12 C Structure.
These (D. es S.),
J. N. Scheurer. 1979, 143p
In French.
U.S. Sales Only.

Two kinds of phenomena have been observed in the reaction exp 16 O+ exp 12 C implies exp 12 C+ alpha + exp 12 C beyond the 40 MeV incident energy threshold: 1) a quasi-zero energy alpha particle emission; 2) a three-fragment emission involving non-zero alpha particle energies but disobeying the commonly accepted three-body dissociation laws. An interpretation of the results is developed in terms of a dissociation governed by three-body Coulomb effects and problems of initial conditions meeting point between quantum distribution and classical evolution are analyzed. The configurations as a whole of the three most compact fragments are shown to take an elongated macroscopic form. From this viewpoint the well-known forms of three-body reaction sequential dissociations are not in contradiction with the disintegration considered. A study of the geometrical structure shows that when the light particle (alpha) is in a very asymmetrical location sequential disintegration is the most probable, whereas when this fragment is close to alignment a type of direct dissociation related to the symmetrical fission of a light nucleus seems to develop. Emphasis is placed on the likelihood of continuity between these two kinds of configuration and on the possibility of understanding certain polarization phenomena (especially for an intermediate dissociation state) by means of three-body Coulomb perturbations, which must be accounted for in heavy systems similar to the one investigated. (Atomindex citation 11:524547)

CENBG-7922 PC **A02**/MF **A01**
Bordeaux-1 Univ., Gradignan (France). Centre d'Etudes Nucleaires.
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
A. Sicre, F. Caitucoli, G. Barreau, T. Benfoughal, and B. Bruneau. 1979, 6p CONF-790765-7
In French.10. international conference on solid state nuclear track detectors, Lyons, France, 2 Jul 1979.
U.S. Sales Only.

A method to obtain experimental angular distributions of fission fragments for (n,f) reactions is described. Fission fragments are detected in thin foils of polycarbonate plastic (Makrafol). The detectors are scanned by the spark method. Etching conditions and spark scanning conditions have been studied to obtain the best signal to noise ratio. This method is used for fission study of strong alpha-emitter actinides like exp 230 Th and exp 231 Pa. (Atomindex citation 11:524555)

CENBG-7932 PC **A02**/MF **A01**
Bordeaux-1 Univ., Gradignan (France). Centre d'Etudes Nucleaires.
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
M. F. Rivet, H. Delagrange, J. M. Alexander, E. Duek, and M. Kaplan. 1979, 1p CONF-791219-8
International symposium on Continuum Spectra of Heavy Ion Reactors, San Antonio, TX, USA, 3 Dec 1979.
U.S. Sales Only.

No abstract available.

CONF-800724-44 PC **A02**/MF **A01**
Massachusetts Inst. of Tech., Cambridge.
Normalizing the Renormalization Group in Deep Inelastic Leptoproduction. CTP No. 876.
R. L. Jaffe. Sep 80, 5p
Contract AC02-76ER03069
20. international conference on high energy physics, Madison, WI, USA, 17 Jul 1980.

The quark-bag model is used to calculate the nucleon matrix elements of local twist-two operators. Bag matrix elements applicable to low Q exp 2 are evolved by use of QCD perturbation theory to a value of Q exp 2 large enough that the data can be expected to be dominated by twist-two. Nonsinglet moments of F sub 3 are plotted. Although only twist-two was studied, the work has implications for higher twist. It is concluded that either the twist-two operator matrix element is Q exp 2 dependent or the bag model predictions for twist-two are very wrong. 2 figures. (ERA citation 06:001519)

CONF-800724-45 PC **A02**/MF **A01**
Massachusetts Inst. of Tech., Cambridge.
Difficult States in the Quark Model: Glueballs and the Pion. CTP No. 874.
J. F. Donoghue. Aug 80, 9p
Contract AC02-76ER03069
20. international conference on high energy physics, Madison, WI, USA, 17 Jul 1980.

Work on the spectroscopy of glueballs and on the pion is reviewed. (ERA citation 06:001511)

CONF-800863-3 PC **A02**/MF **A01**
Massachusetts Inst. of Tech., Cambridge.
Delta -Nucleus Interactions. CTP No. 887.
E. J. Moniz. Oct 80, 20p
Contract AC02-76ER03069
International conference on nuclear physics, Berkeley, CA, USA, 24 Aug 1980.

The theoretical description of pion-nucleus interactions, specifically in the intermediate-energy region dominated delta -excitation, is discussed. Attention is focused on the interaction with and propagation through the nucleus of pions and delta 's. The approach followed basically consists of viewing the delta -nucleus system, formed by pion excitation of a nucleon, as a doorway for the pion-nucleus reaction. Analysis of the interacting delta -nucleus system then leads to new dynamical information summarized in a complex delta -nucleus interaction potential. The associated nuclear medium corrections to delta propagation, related in more conventional language to higher-order corrections in the pion optical potential, are so large as to demand consideration in quantitative studies of nuclear structure with pions. After a discussion of the basic scale parameters characterizing intermediate-energy pion-nucleus interactions, the author discusses the theoretical framework and the extraction of delta interaction parameters from inclusive pion-nucleus cross sections. More detailed tests of the picture, such as elastic scattering angular distributions, are then discussed. Finally, some implications for intermediate-energy photoreactions are outlined. 11 figures. (ERA citation 06:001550)

COO-3130TA-352 PC **A02**/MF **A01**
Brown Univ., Providence, RI. Dept. of Physics.
Progress Report for a Research Program in Theoretical High-Energy Physics.
D. Feldman, H. M. Fried, G. S. Guralnik, A. Jevicki, and K. Kang. 1 Oct 80, 19p
Contract AC02-76ER03130

The past year's research has dealt with a wide range of topics in High-Energy Theoretical Physics. Important new results have been found in the fields of large-N expansions in quantum field theories via an effective Hamiltonian technique, and by the method of classical field equations supplemented by quantum boundary conditions; finite lattice QCD at N/sub c/ = infinity; neutrino oscillations and natural flavor conservation in gauge theory; the vanishing of the renormalized effective potential in phi sub 44 theory; a new method for treating singular differential equations; and an infrared cluster expansion in quantum field theory. In addition, substantial progress has been made in the analyses of lattice gauge theories; studies of factorization properties of mass and infrared singularities in QCD: non-hermitian quantum problems in the context of Gribov field theories; symmetry breaking via contracted groups; the calculation of Cabibbo-type angles and grand unification theories; and strong-coupling methods in gauge and nongauge field theories, using a systematic, lattice-formulated, perturbation theory, and by the extraction of relevant infrared structure. (ERA citation 05:039001)

CRN-PN-78-17 PC **A05**/MF **A01**
Strasbourg-1 Univ. (France). Centre de Recherches Nucleaires.
Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
These (3e cycle),
Kwang-Souk Sim. 1978, 86p
In French.
U.S. Sales Only.

Elastic scattering of heavy ions exp 16 O and exp 28 Si on exp 59 Co, exp 109 Ag and exp 130 Te has been studied at laboratory incident energies between 80 and 140MeV. The optical model was used to analyze elastic angular distributions and different methods for determining the total reaction cross section have been compared. Transfer reactions induced by exp 28 Si on exp 130 Te have been studied at incident energy superior to the Coulomb barrier in the ratio of 1.27. A study of these reactions shows the transition between the quasi-elastic reactions and deep inelastic reactions corresponding to the phenomenon of friction. The diffusion model is used for the analysis of these results. (Atomindex citation 11:524558)

CRN-PN-78-26 PC **A02**/MF **A01**
Strasbourg-1 Univ. (France). Centre de Recherches Nucleaires.
Quasiconfigurations: An Approach to Effective Forces.
A. Poves, E. Pasquini, and A. P. Zuker. 1978, 15p
U.S. Sales Only.

Many-body effective operators appear naturally by dressing states through a perturbative unitary transformation. They have forms that differ from those obtained in the Bloch-Horowitz approach. The f/sub 7/2//sup n/ problem is treated explicitly. Pandya's transforms are generalized. (Atomindex citation 11:516199)

DESY-79/72 PC **A03**/MF **A01**
Deutsches Elektronen-Synchrotron, Hamburg (Germany, F.R.).
Characterization of the Higgs Phase in Lattice Gauge Theories.
G. Muenster. Nov 79, 27p
U.S. Sales Only.

We consider Higgs models on a lattice in 3 or 4 dimensions. Higgs scalars are assumed to transform trivially under a finite subgroup GAMMA of the compact gauge group G. We adopt 't Hooft's definition of the Higgs phase, it is characterized by a nonvanishing free energy per unit length (area) of a vortex in 3 (4) dimensions. By using a Peierls argument we show that the models are in the Higgs phase in this sense for suitable coupling constants. (Atomindex citation 11:518848)

DOE/ER/01388-452 PC **A02**/MF **A01**
Max-Planck-Inst. fuer Kernphysik, Heidelberg (Germany, F.R.).
New Results on the Spectroscopy and Dynamics of Fission.
V. Metag. 1980, 17p CONF-800863-4
Contract AC06-76ER01388
International conference on nuclear physics, Berkeley, CA, USA, 24 Aug 1980.

The present status of Coulomb fission experiments is discussed. Probabilities for fission induced by the purely electromagnetic interaction between heavy ions are compared for the systems Sm + U, W + U, W + Cm, and W + Th. Experimental results on the moments of inertia, spins, and quadrupole moments of fission isomers are summarized. Data are presented that prove their large deformation and thereby justify their interpretation as shape isomers in the second minimum of a double-humped fission barrier. 21 figures, 2 tables. (ERA citation 06:001598)

DOE/ER/01388-454 PC **A02**/MF **A01**
Washington Univ., Seattle. Dept. of Physics.
Polarized Proton Radiative Capture Studies of Giant Resonances.
K. A. Snover. 1980, 14p CONF-800824-24
Contract AC06-76ER01388
International symposium on polarization phenomena in nuclear physics, Santa Fe, NM, USA, 11 Aug 1980.

Several interesting E1, M1, and E2 resonance studies in (p Vector, gamma) reactions are discussed. These include a unique determination of E1 amplitudes in the exp 12 C(p Vector, gamma sub 0) exp 13 N reaction, E2 strength in the exp 15 N(p Vector, gamma sub 0) exp 16 O reaction, M1 decays to the ground states and to the excited O exp + states of the doubly magic exp 16 O and exp 40 Ca nuclei, and the M1 gamma -decay of the stretched 4 exp - , T = 1 particle-hole state in exp 16 O. 8 figures. (ERA citation 06:001553)

DOE/ER/02009-139 PC **A02**/MF **A01**
Indiana Univ. at Bloomington. Dept. of Physics.
Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
B. B. Brabson, R. R. Crittenden, A. R. Dzierba, R. M. Heinz, and H. J. Martin. 1980, 23p
Contract AS02-76ER02009

Research programs during the current contract year are associated with major experiments conducted at SLAC, Fermilab, and CERN. The physics areas under study include an exploration of polarization phenomena in hadron processes, a study of low-p/sub t/ and high-p/sub t/ collisions utilizing the Multiparticle Spectrometer at Fermilab, studies of psi meson production in hadron interactions, and a high-resolution study of e exp + e- interactions at high energy at SLAC. The status of the various efforts is discussed. (ERA citation 06:001467)

DOE/ER/02009-140 PC **A02**/MF **A01**
Indiana Univ. at Bloomington. Dept. of Physics.
Theoretical Particle Physics. Progress Report, December 1, 1079-November 30, 1980.
A. W. Hendry, D. B. Lichtenberg, and D. H. Weingarten. Aug 80, 16p
Contract AS02-76ER02009

Work during the past year ranged from phenomenological studies of various quark systems to applications of quantum chromodynamics and lattice gauge theories. On the phenomenological side for mesons, studies of the charmonium and bottomonium families as well as the spectrum of states containing a single b-quark continued. As a result of some improved measurements, the topic of baryon magnetic moments was reconsidered. At the same time the properties of highly excited 3-quark systems were considered in view of the recent confirmation of resonances with spins up through 21/2. Quark configurations allowing for N colors were also studied, where N was va ied. In the area of gauge field theories on a lattice, several interesting connections between gauge theories and interacting string models were found. Monte Carlo techniques were developed to study the problem of quark confinement, by means of a lattice version of QCD. Lastly, a new approach to the problem of quantizing gravity was started. (ERA citation 05:038974)

DOE/ER/02490-1 PC **A05**/MF **A01**
Ohio Univ., Athens.
Study of Structure of Nuclei with Neutrons and Nuclear Data Measurements for MFE. Progress Report, September 1, 1979-August 31, 1980.
R. O. Lane. 1980, 98p
Contract AS02-76ER02490

Measurements of neutron differential elastic and inelastic scattering cross sections have been made for exp 6 Li, exp 7 Li, exp 11 B and exp 13 C. For exp 7 Li + n, a multichannel R-matrix analysis has been completed, providing much new structure information for the compound exp 8 Li system. These results are in very good agreement with recent theoretical model calculations, so that together the two provide considerable advancement in the state of our knowledge of exp 8 Li. R-matrix analyses of exp 11 B + n and exp 13 C + n elastic scattering data have also been completed. For exp

13 C + n theoretical model calculations have also been carried out and comparisons of these theoretical results with the R-matrix analysis are made. The triplet quadrupole spectrometer (TQS) is now fully operational. Development of new detectors, techniques, data analysis codes and theoretical model codes for use with the TQS system is complete. Measurements of (n,z) cross sections for fusion reactor structural materials e.g. exp 58 Ni are currently underway. Construction of the long-flight-path tunnel for the swinger magnet facility has begun and development for this facility will continue in the coming year. (ERA citation 06:001741)

DOE/ER/03235-1 PC **A03**/MF **A01**
Brown Univ., Providence, RI. Dept. of Chemistry.
Nuclear Excitations and Reaction Mechanisms. Progress Report, 1 November 1979-30 September 1980.
1 Oct 80, 28p COO-3235-88
Contract AS02-76ER03235

Among the topics investigated were the following: photon scattering and consistency condition between seagull quadrupole terms and the absorption sum rule; Raman scattering to negative-parity states; nonlocal terms due to exchange and retardation effects in charge-transfer reactions; consistency and meaning of various approximate channel coupling array equations; derivation of equations used in empirical nuclear reaction analyses; multicluster, n-particle scattering theory; converged molecular bound state calculations; consistency of approximate channel coupling array equations; derivations of equations used in empirical nuclear reaction analyses; and WKB-type approximation in angular momenta for central potentials. References to publications are given. (ERA citation 06:001600)

DOE/ER/03992-402 PC **A02**/MF **A01**
Texas Univ. at Austin. Center for Particle Theory.
New Experimental Evidence for a New Interpretation of Flavor SU(3).
A. Bohm. Jul 80, 10p CONF-8006126-1
Contract AS05-76ER03992
International colloquium on group theoretical methods in physics, Cocoyoc, Mexico, Jun 1980.

Present experimental data require a refinement of the Cabibbo model in which SU(3) is interpreted as spectrum-generating group. 3 tables. (ERA citation 06:001506)

DOE/ER/03992-412 PC **A02**/MF **A01**
Texas Univ. at Austin. Center for Particle Theory.
Sequential Internal Supersymmetry.
Y. Ne'eman, and S. Sternberg. Sep 80, 4p
Contract AS05-76ER03992

The supergroups SU(2/1), SU(5/1) and SU(5 = k/1) provide fitting classifications, unifying weak-electromagnetic, color, and sequential flavor, respectively. (ERA citation 05:039000)

DOE/ER/03992-413 PC **A02**/MF **A01**
Texas Univ. at Austin. Center for Particle Theory.
Geometric Ghosts and Unitarity.
Y. Ne'eman. Sep 80, 5p
Contract AS05-76ER03992

A review is given of the geometrical identification of the renormalization ghosts and the resulting derivation of Unitarity equations (BRST) for various gauges: Yang-Mills, Kalb-Ramond, and Soft-Group-Manifold. (ERA citation 05:039004)

DOE/ER/03992-414 PC **A02**/MF **A01**
Texas Univ. at Austin. Center for Particle Theory.
Color in Internal Supersymmetry Unification.
Y. Ne'eman, and S. Sternberg. Sep 80, 5p
Contract AS05-76ER03992

A scheme has been introduced in earlier work for determining the charge of the quarks and leptons in successive generations. Appropriate parameter values were determined to reproduce the observed values of electric charge, under the hypothesis of three colors. It is shown here that the number of colors is fixed by the observed charges to be one (i.e., color is reduced to quark number, at most) or three. (ERA citation 06:001508)

DOE/ER/03992-422 PC **A02**/MF **A01**
Tel-Aviv Univ. (Israel). Dept. of Physics and Astronomy.
Unification Through a Supergroup.
Y. Ne'eman. 1980, 9p TAUP-132-80
Contract AS05-76ER03992
Portions of document illegible.

The representations of supergroups provide the most precise fit to the known set of fundamental physical matter fields SU (2/1) describes the unified weak-electromagnetic interactions and SU(5 + k/1) contains SU(3) color and 2/sup k/exact generations. Moreover, SU(2/1) predicts that the 4th states of the lepton multiplets (i.e. nu /sub R/ exp 0) decouple, whereas they don't in quark multiplets, and SU(n/1) predicts that the color degree of freedom is an SU(3). All relevant constructions are provided. (ERA citation 06:001518)

DOE/ER/71001-8 PC **A02**/MF **A01**
Montana Univ., Missoula.
Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
M. J. Jakobson, and R. H. Jeppesen. 8 Feb 80, 10p
Contract AT06-76ER71001

The principal effort has been devoted to the data analysis for the pion-nucleus total cross section experiment. Forward scattering amplitudes have been obtained for pi +- mesons on Al, exp 40 Ca, Cu, Sn, Ho, and Pb. These results are given. Work is continuing on the data reduction for the remaining targets. (ERA citation 06:001478)

DOE/TIC-11287 PC **A03**/MF **A01**
Oak Ridge National Lab., TN.
Application of the Shell Model to Nuclear Spectroscopy.
J. B. McGrory. 1980, 32p
Contract W-7405-ENG-26

An overview is given of existing nuclear shell model technology, along with an indication of how well nuclear phenomena are described by the nuclear shell model and possible future directions of the field. Some truncation methods that might be useful in extending the domain of applicability of the shell model to higher major shells are discussed; the concept of cluster coupling is considered at some length. Then results of shell-model calculations (energy levels and wave functions) are given for exp 20 Ne, exp 24 Mg, exp 28 Si, exp 56 Fe, exp 58 Fe, and exp 60 Fe; energy levels only are exhibited for exp 204 Pt, exp 204 Pb, exp 206 Po, exp 208 Po, exp 208 Rn, exp 210 Po, and exp 212 Rn. 8 figures, 7 tables. (ERA citation 06:001620)

HEDL-SA-2227-FP PC **A02**/MF **A01**
Hanford Engineering Development Lab., Richland, WA.
Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
F. Schmittroth. Sep 80, 13p CONF-800979-8
Contract AC14-76FF02170
Workshop on nuclear data evaluation methods and procedures, Upton, NY, USA, 22 Sep 1980.

Methods of estimating nuclear decay data for short-lived neutron-rich nuclides are reviewed. The emphasis is on average decay energies. The connection with other data such as half-lives, delayed neutrons, and antineutrino spectra is noted within the context of the beta strength function. Integral data tests are made by comparisons of calculated and measured decay heat for exp 235 U. (ERA citation 06:001574)

IFT-P-11/79 PC **A03**/MF **A01**
Instituto de Fisica Teorica, Sao Paulo (Brazil).
Non-Orthogonal Harmonic-Osciliator Basis for Three-Body Problems.
D. A. Agrello, V. C. Aguilera-Navarro, and E. Chacon. 1979, 31p
U.S. Sales Only.

A set of harmonic-oscillator states suitable for the representation of the wave function of the bound states of a system of three identical particles is presented. As an illustration of the possibilities of the states defined in this paper, they are applied in a variational determination of the lowest symmetric S state of exp 12 C, in the model of three structureless alpha particles interacting through the Coulomb force plus a phenomenological two-body force. (Atomindex citation 11:518721)

IFVE-OTF-79-139 PC **A02**/MF **A01**
Gosudarstvennyi Komitet po Ispol'zovaniyu Atomnoi Energii SSSR, Serpukhov. Inst. Fiziki Vysokikh Energii.
General Solution of Many-Channel Inverse Scattering Problem.
S. N. Sokolov. 1979, 17p
U.S. Sales Only.

The general solution of the inverse scattering problem is found for an arbitrary unitary many-channel S-matrix. Particular solutions correspond to particular off-shell continuations of S and are usually nonlocal. The method is simple and applicable in the relativistic case as well. (Atomindex citation 11:518892)

IFVE-OTF-79-96 PC **A02**/MF **A01**
Gosudarstvennyi Komitet po Ispol'zovaniyu Atomnoi Energii SSSR, Serpukhov. Inst. Fiziki Vysokikh Energii.
Description of Final States and Infrared Divergences in Quantum Electrodynamics.
F. A. Lunev. 1979, 9p
In Russian.
U.S. Sales Only.

To eliminate infrared divergences in matrix elements in quantum electrodynamics, the final states were modified. The Glauber coherent states were used as the final states. It has been proved that the usage of such states results in mitigating the infrared divergences in all the orders of the perturbation theory, and the matrix element corresponding to the emission of any final amount of photons increases not faster than logarithmically when the photons approach zero. (Atomindex citation 11:518832)

INIS-mf-5640 PC **A06**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Conformal Invariance in the Quantum Field Theory.
Tese (M.Sc.),
V. Kurak. Sep 75, 111p
In Portuguese.
U.S. Sales Only.

Basic features concerning the present knowledge of conformal symmetry are illustrated in a simple model. Composite field dimensions of this model are computed and related to the conformal group. (Atomindex citation 11:518823)

INIS-mf-5649 PC **A06**/MF **A01**
Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro.
Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
Tese (M.Sc.),
L. C. S. de Oliveira. 1977, 110p
In Portuguese.
U.S. Sales Only.

The radiative correction method, which appears in quantum field theory, is studied for some weak interaction processes, e.g., Beta decay and muon decay. Such a method is then applied to calculate transition probability for the electron-neutrino scattering using the U-A theory as a base. The calculations of infrared and ultraviolet divergences are also discussed. (Atomindex citation 11:518856)

IPNO-T-79-08 PC **A05**/MF **A01**
Paris-11 Univ., Orsay (France). Inst. de Physique Nucleaire.
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
These (3e Cycle),
A. Zerrouki. 1979, 93p
In French.
U.S. Sales Only.

The radioactive decay of exp 185 Tl, exp 186 Tl, exp 187 Tl has been studied on the isotope separator Isocele II working on line with the Orsay synchrocyclotron from Au(exp 3 He,xn) reactions: the emitted alpha lines have been measured and

the main gamma lines belonging to the exp 187 Tl implies exp 187 Hg decay have been identified. The exp 185 Hg, exp 187 Hg, exp 189 Hg high spin states have been studied using the following (Hl,xn) reactions obtained on the Strasbourg MP Tandem: exp 168 Er(exp 24 Mg,xn) exp 187 Hg, exp 188 Hg, exp 166 Er(exp 24 Mg,xn) exp 185 Hg, exp 186 Hg, exp 157 Gd(exp 32 S,xn) exp 184 Hg, exp 185 Hg, exp 158 Gd(exp 32 S,5n) exp 185 Hg and exp 175 Lu(exp 19 F,5n) exp 189 Hg. The excitation functions are indicated and a high spin level scheme of exp 189 Hg is proposed: it is compared to the 'quasiparticle + triaxial rotor' model predictions. A level scheme of exp 183 Ir is proposed from the data collected at Isolde II (CERN) by Dr. Schuck: it is anayzed within the framework of the same theoretical model used above. (Atomindex citation 11:524601)

ISN-78-26 PC **A04**/MF **A01**
Grenoble-1 Univ. (France). Inst. des Sciences Nucleaires.
Complete Fusion exp 20 Ne + exp 12 C at 110 MeV.
These (3e Cycle),
J. C. Saulnier. 1978, 70p
In French.
U.S. Sales Only.

Identification in mass and charge of products of the reaction exp 20 Ne (Elab = 110 MeV) + exp 12 C has been obtained using a time-of-flight system and a delta E-E telescope. Angular distributions and energy spectra have been measured between laboratory angles of 3.7 exp 0 and 17 exp 0 . The fusion cross-section has been measured to be 1270 +- 150 mb, with the reaction cross-section of 1700 +- 170 mb. Yields of evaporation residues are compared to predictions of the code GROGI2, using the Hauser-Feshbach angular momentum-dependent formalism. Calculations of the laboratory energy and angular distributions of evaporation residues are carried out and compared with the experimental data for several center of mass angular distributions (isotropic, 1/sin theta, 1/sin exp 2 theta). (Atomindex citation 11:524542)

Juel-Spez-47 PC **A07**/MF **A01**
Kernforschungsanlage Juelich G.m.b.H. (Germany, F.R.). Inst. fuer Kernphysik.
Induced Isospin Mixing in Direct Nuclear Reactions.
Diss,
H. Lenske. Jul 79, 140p
In German.
U.S. Sales Only.

The effect of charge-dependent interactions on nuclear reactions is investigated. First, a survey is given on the most important results concerning the charge dependence of the nucleon-nucleon interaction. The isospin symmetry and invariance principles are discussed. Violations of the isospin symmetry occurring in direct nuclear reactions are analyzed using the coupled channel theory, the folding model and microscopic descriptions. Finally, induced isospin mixing in isospin-forbidden direct reactions is considered using the example of the inelastic scattering of deuterons on exp 12 C. (Atomindex citation 11:516156)

JINR-E-1-12086 PC **A02**/MF **A01**
Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of High Energy.
Monotonous Braking of High Energy Hadrons in Nuclear Matter.
Z. Strugalski. 1979, 16p
U.S. Sales Only.

Propagation of high-energy hadrons in nuclear matter is discussed. The possibility of the existence of the monotonic energy losses of hadrons in nuclear matter is considered. In favor of this hypothesis experimental facts such as pion-nucleus interactions (proton emission spectra, proton multiplicity distributions in these interactions) and other data are presented. The investigated phenomenon in the framework of the hypothesis is characterized in more detail. (Atomindex citation 11:524567)

JINR-E-2-12369 PC **A02**/MF **A01**
Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Nuclear Problems.
Elastic Pd and Quasifree A(p, Nd)B Scattering at Intermediate Energies.
L. Vegh. 1979, 12p
U.S. Sales Only.

Elastic pd and p<NN> implies Nd scattering at backward angles has been studied within the one-pion-exchange model. The p<NN> implies Nd amplitudes depend on the small-distance behaviour of the <NN> relative wave functions only. The A(p, Nd)B quasifree scattering is described in terms of the p<NN> implies Nd amplitudes. (Atomindex citation 11:516242)

JINR-E-2-12637 PC **A02**/MF **A01**
Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics.
Suggestion About the Absence of the Phase Transition, Vacuum Degeneration, Spontaneous Symmetry Breaking and Zero-Mass Goldstone-Bosons in QFT Models of the Type Gphi exp 4.
L. G. Zastavenko. 1979, 12p
U.S. Sales Only.

The usual proof of the phase transition existence in the gphi exp 4 model is considered. (For M exp 2 >M sub 02 minimum of the effective potential is at phi(0)=0, for M exp 2 >M sub 02 this minimum is at phi(0)=+-lambda not equal to 0, lambda implies + infinity at M exp 2 implies - infinity.) This proof is shown to be wrong, this suggesting the absence in the model considered of the phase transition, vacuum degeneration, spontaneous symmetry breaking and zero-mass Goldstone bosons. (Atomindex citation 11:518911)

JINR-R-1-12125 PC **A02**/MF **A01**
Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of High Energy.
Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
A. Abdivaliev, N. Angelov, and A. P. Gasparyan. 1979, 14p
In Russian.
U.S. Sales Only.

Experiments on the determination of anomalouse-cays of superdense nuclei with energy higher than 16.4 MeV and in the 0.5-1000 ms time range were performaned. The special working conditions for bubble chambers, when a chamber registers only delayed nuclear radiation, are set forth. The two-meter hydrogen bubble chamber was irradiated by pi exp - -mesons with the 12.2 GeV/c momentum. The pi exp - -mesons flux constituted 10 exp 5 part/cycle. The Ta (A=180.88) target 0.3 cm long was placed along the beam into the chamber. The two-meter propane bubble chamber was irradiated by the 5 GeV/c protons on the synchrophasotron. The advantage of the experiments on the synchrophasotron is the possibility of chamber irradiation by heavy nuclei with easily controllable energy. It is shown that using this technique cross sections on the 10 exp -33 -10 exp -35 cm exp 2 /nucleus level can be determined comparatively easily. (Atomindex citation 11:516257)

KFK-2386/I PC **A03**/MF **A01**
Kernforschungszentrum Karlsruhe G.m.b.H. (Germany, F.R.). Projekt Schneller Brueter.
Status of the Nuclear Data Library KEDAK-3. July 1979.
B. Goel, and B. Krieg. Nov 79, 44p
U.S. Sales Only.

This document summarizes the status and the contents of the lately revised version of KEDAK. This report supersedes the previous report KFK 2234. (Atomindex citation 11:529115)

LA-UR-80-2675 PC **A02**/MF **A01**
Los Alamos Scientific Lab., NM.
Intermediate Structure in Unresolved Resonances of Fissile and Fertile Nuclides.
M. S. Moore. 1980, 13p CONF-800942-11
Contract W-7405-ENG-36
ANS topical meeting on 1980 advances in reactor physics and shielding, Sun Valley, ID, USA, 14 Sep 1980.

Evidence for the existence of intermediate structure in the unresolved resonance fission and capture cross sections of exp 235 U and in the capture cross section of exp 238 U is reviewed. Certain of the statistical tests that have been used are known to be compromised by finite resolution when applied to unresolved resonance data, but it is concluded that over most of the energy range the test results are valid. Parity assignments for the structure in exp 238 U(n, gamma) suggest that s-wave neutron absorption is responsible for much of the structure. If this is the case, the cross section fluctuations are most likely due to fluctuations in the radiative capture width, rather than in the neutron width. Finally, the practical effect of the possible presence of width correlations in fertile and fissile nuclides is addressed. 1 figure, 1 table. (ERA citation 05:039070)

LA-8524-PR PC **A03**/MF **A01**
Los Alamos Scientific Lab., NM.
Applied Nuclear Data Research and Development. Progress Report, April 1-June 30, 1980.
C. I. Baxman, and P. G. Young. Sep 80, 35p
Contract W-7405-ENG-36

Activities of the Los Alamos Nuclear Data Group for the period April 1 through June 30, 1980, are described. Areas of work were the following: theory and evaluation of nuclear cross sections; nuclear cross section processing; and fission products and actinides: yields, decay data, depletion, and buildup. Two papers with significant data are abstracted and indexed individually. 8 figures, 6 tables. (ERA citation 06:001542)

LBL-10688 PC **A08**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Workshop on Nuclear Dynamics.
Mar 80, 175p CONF-800329-
Contract W-7405-ENG-48
Workshop on nuclear dynamics, Tahoe City, CA, USA, 17 Mar 1980.

A separate abstract was prepared for each of the 28 papers in this report. (ERA citation 06:001604)

LBL-10899 PC **A05**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Pion Production in Nucleus-Nucleus Collisions Below a Few GeV/Nucleon: Past, Present and Future.
L. S. Schroeder. Jul 80, 77p CONF-800709-4
Contract W-7405-ENG-48
Seminar on high-energy nuclear interactions and properties of dense nuclear matter, Hakone, Japan, 7 Jul 1980.

A general review of experimental data on pion production in A-A collisions for incident energies below a few GeV/nucleon is presented. Early data on inclusive pion spectra, which served as the genesis for present pion measurements, are discussed. The majority of the paper is devoted to present pion experiments, with an emphasis being placed on what such experiments tell about the general features of high-energy A-A collisions. Particular attention is given to multipion production as studied in recent streamer chamber experiments. The review ends with projections on future experiments with the heavier beams that will be available in 1982 at Berkeley, and the higher-energy beams that will hopefully be available in the not too distant future. 39 figures. (ERA citation 06:001578)

LBL-11510 PC **A03**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Low Energy Weak Interactions and Decays.
G. H. Trilling. Sep 80, 26p CONF-800724-39
Contract W-7405-ENG-48
20. international conference on high energy physics, Madison, WI, USA, 17 Jul 1980.

Results presented during sessions B5 to 7 at the XXth International Conference on High Energy Physics (University of Wisconsin, Madison, July 17 to 23, 1980) are discussed. Essentially all the material presented is summarized. The sessions covered various aspects of low-energy weak interactions. The following topics are addressed: CP-invariance violation, high-statistics study of lambda beta decay, parity violation in proton-nucleus scattering at 6 GeV/c, new results on the tau, charm particle decays (direct lifetime determinations, semileptonic branching ratios, comparison of semileptonic rate with theoretical expectations, further

study of charm meson decays, F decays), and neutrino oscillations. 6 figures, 9 tables. (ERA citation 06:001490)

LBL-11517 PC **A10**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Nonlinear Models in 2 + Epsilon Dimensions.
D. H. Friedan. Aug 80, 224p
Contract W-7405-ENG-48
Thesis.

The general nonlinear scalar model is studied at asymptotically low temperature near two dimensions. The low-temperature expansion is renormalized, and effective algorithms are derived for calculation to all orders in the renormalized expansion. The renormalization group coefficients are calculated in the two-loop approximation, and topological properties of the renormalization group equations are investigated. Special attention is paid to the infrared instabilities of the fixed points, since they provide the continuum limits of the model. The model consists of a scalar field phi on Euclidean 2 + epsilon space whose values pl·i(x) lie in a finite-dimensional differentiable manifold. 4 figures. (ERA citation 06:001524)

LBL-11561 PC **A02**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Open and Hidden Charm Muoproduction.
A. R. Clark, K. J. Johnson, and L. T. Kerth. Sep 80, 10p FERMILAB-CONF-80/84-exp, COO-3072-116, CONF--800724--40
Contracts W-7405-ENG-48, AC02-76CH0300
20. international conference on high energy physics, Madison, WI, USA, 17 Jul 1980.

New results are presented on open and hidden charm and bottom production by 209-GeV muons interacting in a magnetized steel calorimeter. The upper limit on the production of T states by muons is sigma(mu N implies mu UPSILONX)B(UPSILON implies mu mu) < 22 x 10 exp -39 cm exp 2 (90% confidence level). The distributions of elastically produced psi's are consistent with s-channel helicity conservation (SCHC) and disagree with psi dominance. From analysis of dimuon final states the cross section for diffractive charm muoproduction is 6.9/sub -1.4/sup +1.9/ nb. The structure function F sub 2 (c anti c) for diffractive charmed-quark pair production is presented. 5 figures, 2 tables. (ERA citation 06:001479)

LPC-79-16 PC **A02**/MF **A01**
College de France, Paris. Lab. de Physique Corpusculaire.
Simple Parametrization of the Structure Functions of the Photon.
A. Nicolaidis. Jul 79, 22p
U.S. Sales Only.

A simple method is proposed for parametrizing the structure functions of the photon. After factoring out the singular behavior at X approximately 0, the structure functions are expanded in series of Jacobi polynomials. For the distribution functions of quark and gluon within a photon and the fragmentation function of a quark into a photon only three or five terms are needed to reproduce accurately the x dependence over the entire x range. (Atomindex citation 11:518853)

LYCEN-7965 PC **A05**/MF **A01**
Lyon-1 Univ., Villeurbanne (France). Inst. de Physique Nucleaire.
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
These (D. es S.),
J. Sau. 1979, 89p
In French.
U.S. Sales Only.

Some nuclei (exp 128 Sn, exp 129 Sn, exp 130 Sn, exp 129 Sb, exp 130 Sb, exp 132 Sb, exp 132 Te, exp 134 Te) near the double closed shell Z=50, N=82 are studied theoretically. In order to deal with systems of many fermions distributed on different nondegenerate sub-shells, an automatic orthonormalization method suitable to deal with overcomplete set of vectors is developed and applied to the nuclei exp 128 Sn, exp 129 Sn. The coupling of a proton with these last nuclei is then performed microscopically. The numerical problems issuing from the diagonalization of large matrices, especially in the case of exp 132 Te, have been solved using the Lanczos method. The theoretical results on the energy levels are in good agreement with the experimental situation. The comparison cannot be extended to the transitions probabilities due to the lack of experimental information. (Atomindex citation 11:524541)

ORNL/TM-7341 PC **A09**/MF **A01**
Oak Ridge National Lab., TN.
GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
D. M. Hetrick, and C. Y. Fu. Oct 80, 198p ENDF-303
Contract W-7405-ENG-26

The PDP-10 FORTRAN IV computer programs INPUT.F4, GLUCS.F4, and OUTPUT.F4, which employ Bayes' theorem (or generalized least-squares) for simultaneous evaluation of reaction cross sections, are described. Evaluations of cross sections and covariances are used as input for incorporating correlated data sets, particularly ratios. These data are read from Evaluated Nuclear Data File (ENDF/B-V) formatted files. Measured data sets, including ratios and absolute and relative cross section data, are read and combined with the input evaluations by means of the least-squares technique. The resulting output evaluations have not updated only cross sections and covariances, but also cross-reaction covariances. These output data are written into ENDF/B-V format. (ERA citation 06:001543)

PUC-tn-01/79 PC **A02**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Gauge Field Copies.
C. G. Bollini, J. J. Giambiagi, and J. Tiomno. Jan 79, 9p
U.S. Sales Only.

The construction of field strength copies without any gauge constraint is discussed. Several examples are given, one of which is not only a field strength copy but also (at the same time) a 'current copy'. (Atomindex citation 11:518741)

PUC-tn-08/79 PC **A02**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Scattering Theory and 1/N Expansion in the Chiral Gross-Neveu Model.
R. Koeberle, V. Kurak, and J. A. Swieca. Apr 79, 18p
U.S. Sales Only.

It is shown how to establish the scattering theory of the chiral Gross-Neveu model in terms of a massive field with generalized statistics. It is in terms of this field that the property of anti-particles being bound states of particles in consistently formulated. An auxiliary local fermi field is also employed in order to develop an infrared regular 1/N expansion. The connection between these two fields is discussed. (Atomindex citation 11:518815)

RLO-1388-821 PC **A04**/MF **A01**
Washington Univ., St. Louis, MO.
Quark Form Factors and Leading Double Logarithms in QCD.
S. D. Ellis, and W. J. Stirling. May 80, 51p CONF-800724-41
Contract AC06-76ER01388
20. international conference on high energy physics, Madison, WI, USA, 17 Jul 1980.

Perturbative quantum chromodynamic corrections involving the emission of gluons that are both soft and collinear are discussed for both hadronic production of lepton pairs and e exp + e exp - annihilation. The result is an exponential, double logarithmic quark form factor. The differences between previous analyses are clarified, and the possible experimental observation of the form factor is discussed and illustrated. 9 figures, 1 table. (ERA citation 06:001526)

SLAC-PUB-2593 PC **A02**/MF **A01**
Stanford Linear Accelerator Center, CA.
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
F. C. Porter. Aug 80, 5p CALT-68-792, CONF-800724-38
Contract AC03-76SF00515
20. international conference on high energy physics, Madison, WI, USA, 17 Jul 1980.

The inclusive cross section for eta production in e exp + e exp - interactions near charm threshold was measured by use of the Crystal Ball detector at SPEAR. By comparison of the inclusive eta production above and below charm threshold the following limits were obtained: R(e exp + e exp - implies F anti FX)BR(F implies eta x) < 0.3 (90% C.L., E/sub cm/ < 4.5 GeV); BR(D implies eta x) < 0.13 (90% C.L., averaged over charged and neutral D components of the psi''). 4 figures, 1 table. (ERA citation 06:001488)

SLAC-PUB-2594 PC **A02**/MF **A01**
Stanford Univ., CA.
Hadronic Decays of the eta/sub C/.
K. Koenigsmann. Aug 80, 4p HEPL-879, CONF-800724-43
Contract AC03-76SF00515
20. international conference on high energy physics, Madison, WI, USA, 17 Jul 1980.

Results on hadronic decays of the eta/sub c/ candidate state are presented. A mass value of M = (2978 +- 9) MeV is obtained. The branching fraction for the decay into eta pi exp + pi exp - is presented and an upper limit for the decay into pi exp 0 K exp + K exp - is given. 6 figures. (ERA citation 06:001502)

SLAC-PUB-2595 PC **A02**/MF **A01**
Stanford Linear Accelerator Center, CA.
Synthesis of Quantum Chromodynamics and Nuclear Physics.
S. J. Brodsky, and G. P. Lepage. Aug 80, 10p CONF-800829-8
Contract AC03-76SF00515
International conference on the few body problems, Eugene, OR, USA, 17 Aug 1980.

The asymptotic freedom behavior of quantum chromodynamics allows the rigorous calculation of hadronic and nuclear amplitudes at short distances by perturbative methods. The implications of QCD for large-momentum-transfer nuclear form factors and scattering processes, as well as for the structure of nuclear wave functions and nuclear interactions at short distances, are discussed. The necessity for color-polarized internal nuclear states is also discussed. 6 figures. (ERA citation 05:039082)

SLAC-PUB-2596 PC **A02**/MF **A01**
Wisconsin Univ.-Madison. Dept. of Physics.
Role of Nonspectator Interactions in Charm and Bottom Decays.
V. Barger, J. P. Leveille, and P. M. Stevenson. Aug 80, 6p CONF-800724-33
Contract AC04-76DP00789
20. international conference on high energy physics, Madison, WI, USA, 17 Jul 1980.

The role of annihilation and exchange diagrams in charmed meson, lambda exp + /sub c/, and B meson decays is analyzed. 5 figures. (ERA citation 05:038983)

SLAC-PUB-2605 PC **A03**/MF **A01**
Stanford Linear Accelerator Center, CA.
Exclusive Processes and Hadron Dynamics at Short Distances.
S. J. Brodsky, and G. P. Lepage. Sep 80, 48p CONF-800678-2, CONF-8006108-3
Contract AC03-76SF00515
Symposium on topical questions in QCD, Copenhagen, Denmark, 9 Jun 1980.

The predictions of perturbative QCD for a number of areas of hadron dynamics are discussed, including exclusive processes at large momentum transfer, the endpoint behavior of hadronic structure functions, and the Fock state structure of hadron wave functions, especially their behavior at short distances. New results for exclusive two-photon processes, the normalization of high-twist contributions to the meson structure function, and the calculation of the valence Fock state probability of

the pion are presented. The contrasting features of QCD and parton model dynamics are reviewed. 57 references, 14 figures. (ERA citation 06:001533)

SLAC-PUB-2619 PC **A02**/MF **A01**
Stanford Linear Accelerator Center, CA.
Parity Violation in Polarized Electron Scattering.
C. Y. Prescott. Oct 80, 24p CONF-800824-23
Contract AC03-76SF00515
International symposium on polarization phenomena in nuclear physics, Santa Fe, NM, USA, 11 Aug 1980.

The weak forces are responsible for the decay of radioactive nuclei, and it was in these decay processes where parity non-conservation was first observed. Beta decay occurs through emission of e exp + or e exp - particles, indicating that the weak force can carry charge of both signs, and it was natural to speculate on the existence of a neutral component of the weak force. Even though weak neutral forces had not been observed it was conjectured that a neutral component of weak decay could exist, and Zel'dovich in 1957 suggested that parity violating effects may be observable in electron scattering and in atomic spectra. More than twenty years have passed since the early conjectures, and a great deal has been learned. Progress in quantum field theory led to the development of the SU(2) x U(1) gauge theory of weak and electromagnetic interactions and provided a renormalizable theory with a minimum of additional assumptions. Gauge theories predicted the existence of a new force, the neutral current interaction. This new interaction was first seen in 1973 in the Gargamelle bubble chamber at CERN. Today the neutral currents are accepted as well established, and it is the details of the neutral current structure that occupy attention. In particular the role that electrons play cannot be tested readily in neutrino beams (recent neutrino-electron scattering experiments are, however, rapidly improving this situation) and therefore interest in electron-hadron neutral current effects has been high. Parity violation is a unique signature of weak currents, and measurements of its size are a particularly important and sensitive means for determining the neutral current structure. (ERA citation 06:001493)

SLAC-224 PC **A99**/MF **A01**
Stanford Linear Accelerator Center, CA.
Quantum Chromodynamics.
A. Mosher. Jan 80, 606p CONF-790774-
Contract AC03-76SF00515
SLAC summer institute on particle physics: quantum chromodynamics, Stanford, CA, USA, 9 Jul 1979.

The symposium included lectures covering both the elements and the experimental tests of the theory of quantum chromdynamics. A three day topical conference was included which included the first results from PETRA as well as the latest reports from CERN, Fermilab, and SPEAR experiments. Twenty-one items from the symposium were prepared separately for the data base. (ERA citation 06:001527)

UTTAC-15 PC **A02**/MF **A01**
Tsukuba Univ., Ibaraki (Japan). Tandem Accelerator Center.
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
Y. Toba, Y. Aoki, S. Kunori, K. Nagano, and K. Yagi. 1979, 13p
U.S. Sales Only.

The analyzing power for the exp 208 Pb(polarized p,t) exp 206 Pb(3 exp + ,1.34 MeV) reaction was measured for the first time at E/sub p/ = 22.0 MeV. The cross section was fitted well by a two-step (p,d) (d,t) calculation, but the analyzing power was not at all. The reaction mechanism is not explained by only the sequential transfer processes. (Atomindex citation 11:524576)

20I. Plasma Physics

AD-A091 991/0 PC **A02**/MF **A01**
Stevens Inst. of Tech., Hoboken, NJ. Dept. of Physics and Engineering Physics.
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
Final rept. 1 Oct 79-30 Apr 80,
V. Nardi, and W. Prior. 15 May 80, 19p SIT-P2002, AFOSR-TR-80-1140
Grant AFOSR-75-2754

This report investigates the correlation between the neutron (and x-ray) emission intensity and the intensity of the particle beams generated in a plasma focus discharge in deuterium as an extension of our previous work on scaling laws of x-ray and neutron production. The structure of dense plasmoids which emit MeV ions has been recorded by ion imaging with pinhole camera and contact print techniques. The plasmoids are generated in the same region in which particle beams, neutron and x-ray emission reach a maximum of intensity. Sharply defined boundaries of the ion-beam source and of plasmoids have been obtained by ion track etching on plastic material CR-39.

AD-A092 058/7 PC **A07**/MF **A01**
Naval Research Lab., Washington, DC.
A New Theory for Striations with Experimental Verifications.
Interim rept.,
E. E. Kempe. 14 Oct 80, 148p Rept no. NRL-8261

A new general theory for striated positive columns containing atomic or molecular fill gases is elaborated that gives a unified explanation of both standing striations and cathode-directed and anode-directed moving striations along with the significance of the Novak potential. The p, r, and s striation varieties in neon are explained according to this new theory, including the ionization mechanisms associated with their generation, and the results are experimentally verified via measurements in neon discharges and Penning discharges of neon with argon admixtures. The mathematical model of the positive column derived for this theory shows how an open-loop instability that is an inherent feature of the process maintaining the charged particle density along the column sustains self-excited striations. To illustrate the basic nature of the open-loop instability leading to self-excited striations, a simple analog of the positive column is presented. This new theory therefore contrasts with the widely accepted viewpoint of Pekarek that self-excited striations are caused by closed-loop feedback paths consisting of propagating 'ionization waves' which couple disturbances back to their point of origin with sufficient amplitudes to excite successive ionization waves. Standing striations in RF-excited columns are also explained. (Author)

AD-A092 215/3 PC **A03**/MF **A01**
STD Research Corp., Arcadia, CA.
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
Final rept. 1 Aug 77-31 Oct 80,
D. A. Oliver, T. F. Swean, Jr., C. D. Bangerter, S. T. Demetriadwes, and C. D. Maxwell. 1 Nov 80, 44p Rept no. STDR-80-41
Contract N00014-77-C-0574

A summary of progress made in the prediction of magnetogasdynamic phenomena in explosion MHD flows. Theoretical and computational results are presented for quasi-one-dimensional, two-dimensional, quasi-three-dimensional and high Reynolds number flows in both weak and strong MHD interaction. (Author)

AD-A092 385/4 PC **A02**/MF **A01**
Case Western Reserve Univ., Cleveland, OH. Plasma Research Lab.
Momentum Distribution of Ions in Plasma Beam.
Final scientific rept. 1 May 79-30 Apr 80,
A. Ferendeci, O. K. Mawardi, Paul Webster, and Paul Elkman. 30 Jun 80, 17p AFOSR-TR-80-1046
Contract F49620-79-C-0064

This report describes a modified time of flight analyzer that was used to measure the velocity distribution function of the ions in a dense plasma beam. The beam is produced with a coaxial gun of the Cheng type. The beam density is approximately 10 to the 17th power/cc, and the ions have an average directed velocity of 800 eV. The ions are cold while the electrons have a temperature of 40 eV. The density and energy of the ions in the beam are suitable for injection in a Shiva machine. (Author)

DOE/ET/53004-2 PC **A04**/MF **A01**
Rensselaer Polytechnic Inst., Troy, NY. Plasma Dynamics Lab.
Heavy Ion Beam Probing.
R. L. Hickok. Jul 80, 56p RPDL-80-14
Contract AS02-76ET53004

This report consists of the notes distributed to the participants at the IEEE Mini-Course on Modern Plasma Diagnostics that was held in Madison, Wisconsin in May 1980. It presents an overview of Heavy Ion Beam Probing that briefly describes the principles and discuss the types of measurements that can be made. The problems associated with implementing beam probes are noted, possible variations are described, estimated costs of present day systems, and the scaling requirements for large plasma devices are presented. The final chapter illustrates typical results that have been obtained on a variety of plasma devices. No detailed calculations are included in the report, but a list of references that will provide more detailed information is included. (ERA citation 06:001661)

DOE/ET/53051-10 PC **A03**/MF **A01**
Wisconsin Univ.-Madison.
Lower Hybrid Heating Associated with Mode Conversion on the Wisconsin Toroidal Octupole.
T. L. Owens, and J. E. Scharer. Sep 80, 39p
Contract AS02-76ET53051

Wave heating experiments and wave propagation measurements in the lower hybrid range of frequencies are described. A T antenna launches up to 40 kW of wave power at 140 MHz with better than 95% coupling efficiency. Ion temperature increases of delta T/sub i/ = 37 eV are measured with delta T/sub parallel//T/sub io/ = 12. Ion heating is strongly localized near the lower hybrid turning point for a peak value of (k/sub parallel// omega)(KT/sub i/m/sub e/)/sup 1/2/ approx. = 0.3 corresponding to an upshifted k/sub parallel/ spectrum. Wavelength measurements indicate that the upshift in k/sub parallel/ occurs in the interior of the plasma. Other wave measurements show the existence of a large amplitude weakly damped fast wave component in addition to the slow wave. (ERA citation 06:001652)

DOE/ET/53051-113 PC **A10**/MF **A01**
Wisconsin Univ.-Madison.
Stability Analysis of Cylindrical Vlasov Equilibria.
R. W. Short. 1979, 224p
Contract AS02-76ET53051
Thesis.

A general method of stability analysis is described which may be applied to a large class of such problems, namely those which are described dynamically by the Vlasov equation, and geometrically by clindrical symmetry. The method is presented for the simple case of the Vlasov-Poisson (electrostatic) equations, and the results are applied to a calculation of the lower-hybrid-drift instability in a plasma with a rigid rotor distribution function. The method is extended to the full Vlasov-Maxwell (electromagnetic) equations. These results are applied to a calculation of the instability of the extraordinary electromagnetic mode in a relativistic E-layer interacting with a background plasma. (ERA citation 05:039126)

DOE/ET/53051-9 PC **A02**/MF **A01**
Wisconsin Univ.-Madison.
High beta Studies in the Wisconsin Toroidal Octupole.
J. H. Halle, A. Kellman, R. S. Post, S. C. Prager, and E. J. Strait. Sep 80, 18p
Contract AS02-76ET53051

A wide range of MHD stable high beta plasmas is produced in the Wisconsin Levitated Octupole. At

or near the single fluid regime we obtain, in the bad curvature region, beta = nk(T/sub e/ + T/sub i/)8 pi /B exp 2 approx. = 8%, twice the theoretical single fluid ballooning instability limit of 4%. We also obtain stable plasmas at beta approx. = 35%, 9 times the theoretical limit, in a regime in which both finite ion gyroradius and gyroviscosity effects are important. (ERA citation 06:001682)

DOE/ET/53081-1 PC **A03**/MF **A01**
Washington Univ., Seattle. Fusion Plasma Program.
Experimental Program Based on a High Beta Q Machine. Final Report, 1 May 1978-30 September 1980.
F. L. Ribe. Jul 80, 45p
Contract AT06-76ET53081

This report summarizes work done in designing and constructing the High Beta Q Machine from the inception of the work in May 1978 until the present time. It is a 3-m long, low-compression theta pinch with a 22-cm-diameter segmented compression coil with a minimum axial periodicity length of 10 cm. This capability of driving the machine as a simple, low-density theta pinch, and also of independently applying periodic magnetic fields before or after formation of the plasma column, gives the device considerable flexibility. Reported here is the construction and testing of the machine, development of its diagnostics and initial measurements of the plasma at early times in the duration of the crowbarred magnetic field. The experimental effort has been paralleled by theoretical work to model the diffuse profile, collisionless plasma in its response to the periodic RF magnetic fields. The model chosen is the Freidberg-Pearlstein Vlasov-fluid model which provides an MHD-like description but with accounting of ion kinetic effects over diffuse equilibrium profiles. A computer code has been developed to accurately calculate the resistive response of the plasma column, giving the power absorption by ion Landau damping and more recently, ion-cyclotron damping. (ERA citation 05:039121)

DOE/ET/53087-2 PC **A05**/MF **A01**
United Technologies Research Center, East Hartford, CT.
Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
E. A. Sziklas, W. J. Fader, R. A. Jong, and J. H. Stufflebeam. Jul 80, 99p UTRC-R-80-954876-1
Contract AC02-79ET53087

The Plasma Stabilization Experiment is an effort to enhance stability in a mirror-confined plasma by trapping cold ions with rf fields applied near the mirror throats. Nagoya Type III antennas, coupled to a 60 kW rf power supply are mounted in the throats of the UTRC baseball magnet. An external washer gun provides a source of plasma for both streaming and confined plasma tests. Results show a strong stoppering effect on streaming plasmas and a marginal effect on confined plasmas. Theoretical calculations provide an explanation for the experimental observations. The field generates a ponderomotive force acting on the electrons. The resultant improvement in electron confinement changes the ambipolar potential and inhibits the flow of ions through the mirror throat. Criteria are derived for the validity of this trapping concept. The requisite field strengths are significantly lower than those required to trap ions directly. Scaling laws are developed for application of cold ion trapping to large mirror devices containing dense plasmas. The use of slow-wave antenna structures operated at frequencies above the lower hybrid frequency is recommended for these applications. (ERA citation 06:001683)

EUR-CEA-FC-1014 PC **A03**/MF **A01**
Association Euratom-CEA sur la Fusion, Centre d'Etudes Nucleaires de Fontenay-aux-Roses (France). Dept. de Physique du Plasma et de la Fusion Controlee.
Comments on Various Derivative Methods of the Parametric Dispersion Relations.
D. Moreau. Sep 79, 30p
In French.
U.S. Sales Only.

Two different methods are commonly used in the literature to derive parametric dispersion relations, the 'oscillating reference frame' technique (Silin) and the perturbative method. It has been argued, paradoxally, that they lead to different dispersion relations. We show that they are indeed quite equivalent provided that the coupling equations be developed up to second order in the pump field. The perturbative method as used by many authors, i.e. truncated at first order in the pump, is shown to be valid for resonant decay only. For studying the excitation of 'quasimodes' one must write coupling equations containing the square of the pump amplitude. (Atomindex citation 11:519393)

IFUSP-P-180 PC **A02**/MF **A01**
Sao Paulo Univ. (Brazil). Inst. de Fisica.
Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
R. M. O. Galvao, S. W. Simpson, and E. Wilner. 23p
U.S. Sales Only.

An expression for the second adiabatic invariant J is derived including the effects of plasma diamagnetism and displaced magnetic surfaces. It is shown that for values of beta approximately little than epsilon, where beta is the ratio of kinetic to magnetic pressure and epsilon is the inverse aspect ratio of the torus, J becomes a decreasing function of PSI, the flux function, in the outer region of the plasma column. (Atomindex citation 11:519320)

NRL-MR-4353 PC **A02**/MF **A01**
Naval Research Lab., Washington, DC.
Interferometric Measurement of Small Refraction Angles.
J. A. Stamper. 15 Oct 80, 9p
Contract AI01-77DP40042

Radial and axial refraction angles are separately measured for rays passing through an azimuthally symmetric medium. The fringe slopes from complementary interferograms are used in a derived expression. Shearing interferometry is used in an example. (ERA citation 05:039116)

PB81-850943 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
Rept. for Jan 70-Sep 80,
John H. Frey. Oct 80, 95p NERACUSGNT1409
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning both theoretical and experimental magnetic field configuration effects upon plasma stability/instability in controlled or confined plasmas. Various types of plasma containment devices (e.g., TOKAMAKS, TOKAPOLES, etc.) are discussed, along with specific types of instabilities which may occur in confined plasmas. (Contains 92 citations.)

PB81-850950 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
Rept. for Jan 76-Sep 80,
John H. Frey. Oct 80, 264p NERACEDBNT1409
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning both theoretical and experimental magnetic field configuration effects upon plasma stability/instability in controlled or confined plasmas. Various types of plasma containment devices (e.g., TOKAMAKS, TOKAPOLES, etc.) are discussed, along with specific types of instabilities which may occur in confined plasmas. (Contains 294 citations.)

PB81-850968 PC **N01**/MF **N01**
New England Research Application Center, Storrs, CT.
Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
Rept. for Jan 72-Sep 80,
John H. Frey. Oct 80, 258p NERACIAANT1409
Sponsored by National Technical Information Service, Springfield, VA.

This retrospective bibliography contains citations concerning both theoretical and experimental magnetic field configuration effects upon plasma stability/instability in controlled or confined plasmas. Various types of plasma containment devices (e.g., TOKAMAKS, TOKAPOLES, etc.) are discussed, along with specific types of instabilities which may occur in confined plasmas. (Contains 300 citations.)

PPPL-1715 PC **A03**/MF **A01**
Princeton Univ., NJ. Plasma Physics Lab.
Second Region of Stability.
J. M. Greene, and M. S. Chance. Oct 80, 37p
Contract AM02-76CH03073

A new type of axisymmetric magnetohydrodynamic equilibrium is presented. It is characterized by a region of pressure and safety factor variation with a short scale length imposed as a perturbation. The equilibrium consistent with these profile variations can be calculated by means of an asymptotic expansion. The flexibility obtained by generating such equilibria allows for a close examination of the mechanisms that are relevant to ballooning instabilities - ideal MHD modes with large toroidal mode number. The so-called first and second regions of stability against these modes are seen well within the limits of validity of the asymptotic expansion. It appears that the modes must be localized in regions with small values of the local shear of the magnetic field. The second region of stability occurs where the local shear is large throughout the range where the magnetic field line curvature is destabilizing. (ERA citation 06:001684)

UCRL-85033 PC **A03**/MF **A01**
Lawrence Livermore National Lab., CA.
Numerical Solution of Initial-Value Problems in Plasma Physics.
J. Killeen. Oct 80, 27p
Contract W-7405-ENG-48

The numerical models used in fusion research are briefly reviewed. The application of implicit difference techniques to problems in resistive magnetohydrodynamics, transport and the Fokker-Planck equation is discussed. (ERA citation 05:039128)

20J. Quantum Theory

DESY-79/82 PC **A02**/MF **A01**
Deutsches Elektronen-Synchrotron, Hamburg (Germany, F.R.).
Area Law as a Consequence of the Loop Wave Equation.
M. Luescher. Dec 79, 6p
U.S. Sales Only.

An argument is presented showing that the Wilson loop expectation value decays according to the area law, if it is assumed to satisfy the free loop wave equation. (Atomindex citation 11:518830)

DOE/ER/03992-417 PC **A02**/MF **A01**
Texas Univ. at Austin. Center for Particle Theory.
Soft-Group-Manifold Structure of Supergravity, and the Proof of Unitarity.
J. Thierry-Mieg, and Y. Ne'eman. 1979, 13p
Contract AS05-76ER03992

The Soft Group Manifold (SGM) method of gauging a non-internal group is reviewed. Applications to three different versions of Extended Supergravity are presented. Then the geometric identification of the ghost fields and BRS equations, another aspect of the Group Manifold method, is summarized. The results are applied to Supergravity, and a completion of the proof of Unitarity of Sterman, Townsend, and Van Nieuwenhuizen is provided. 3 figures. (ERA citation 06:001644)

JINR-R-2-12670 PC **A02**/MF **A01**
Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics.
Structure of Representations of Conformal Supergroup in the OSp(1,4) Basis.
E. A. Ivanov, and A. S. Sorin. 1979, 20p
In Russian.
U.S. Sales Only.

A new method is proposed for constructing the complete set of irreducible representations of conformal supergroup of SU(2,2/1) acting on superfields of the PHI/sub k/ (x, THETA/sub +/, THETA /sub -/ type (k is the Lorentz index, THETA /sub +/, THETA /sub -/ are the left- and right-handed Grassmann coordinates). Its main point is the reduction of the problem to the much more simple task of extracting the minimal set of certain invariant spaces of the orthosymplectic subgroup OSp(1,4)OSp exp 1 (1,4) of the SU(2,2/1) supergroup. These spaces are those closed also with respect to another OSp(1,4) subgroup OSp exp 2 (1,4) which intersects with OSp exp 1 (1,4) over 0(2,3) and completes it to the whole SU(2,2/1). The precise criterion for selecting such invariant spaces is formulated. New series of SU(2,2/1) representations are found, and the problem of equivalency between representations induced by different little (super) groups is discussed. (Atomindex citation 11:518807)

JINR-R-5-12459 PC **A02**/MF **A01**
Joint Inst. for Nuclear Research, Dubna (USSR). Lab. of Theoretical Physics.
Discrete Subgroups of the Three-Dimensional Rotation Group.
R. M. Muradyan. 1979, 21p
In Russian.
U.S. Sales Only.

A direct and unique method for constructing irreducible representations for all discrete subgroups of the three dimensional rotation group is suggested. The application of this method is examplified by the groups of triangle, tetrahedron and octahedron. (Atomindex citation 11:518849)

KFKI-1979-65 PC **A02**/MF **A01**
Kozponti Fizikai Kutato Intezet, Budapest (Hungary).
Tetrads of Observers and Einstein's Equations.
A. Sebestyen. Nov 79, 6p
U.S. Sales Only.

In the paper it is shown that the tetrad formalism can be used to deduce the Lagrangian responsible for the effects of gravitation. The fields of a tetrad specified by a certain type of observers can be considered as physical fields and then these fields can be rendered to follow the variational principle. A Lagrangian can be built up along the classical routes, and the Euler-Lagrange equations turn out to be Einstein's equations. It is essential that local Lorentz covariance is used in this deduction. (Atomindex citation 11:518883)

PUC-tn-11/79 PC **A02**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Gravitational Torque in General Relativity.
F. de Felice. Jun 79, 9p
U.S. Sales Only.

An expression is found for the vorticity transport equation in which the gravitational torque on a fluid element appears explicitly. (Atomindex citation 11:518784)

20K. Solid Mechanics

AD-A091 947/2 PC **A04**/MF **A01**
David W. Taylor Naval Ship Research and Development Center, Bethesda, MD.
Response of a Point Excited Infinitely Long Cylindrical Shell Immersed in an Acoustic Medium.
Research and development rept.,
William Vogel, and David Feit. Nov 80, 62p Rept no. DTNSRDC-80/061

The velocity distribution of a point excited, infinitely long, thin cylindrical shell immersed in an acoustic medium is considered. The problem is analyzed by applying integral transform techniques; a solution is then obtained by evaluating the inverse transform integrals numerically. Examples are presented to illustrate the effect of fluid loading on the vibrational behavior of a point excited cylindrical shell. In addition, results are compared with those of a point excited plate with and without fluid loading. (Author)

AD-A092 074/4 PC **A03**/MF **A01**
Brown Univ., Providence, RI. Div. of Engineering.
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
Interim rept.,
A. J. Rosakis, and L. B. Freund. Sep 80, 46p
Rept no. N00014-0051/5
Contract N00014-78-C-0051

The shadow spots which are obtained in using the optical method of caustics to experimentally determine dynamic stress intensity factors are usually interpreted on the basis of a static elastic crack model. In this paper, an attempt is made to include both crack tip plasticity and inertial effects in the analysis underlying the use of the method in reflection. For dynamic crack propagation in the two-dimensional tensile mode which is accompanied by a Dugdale-Barenblatt line plastic zone, the predicted caustic curves and corresponding initial curves are studied within the framework of plane stress and small scale yielding conditions. These curves are found to have geometrical features which are quite different from those for purely elastic crack growth. Estimates are made of the range of system parameters for which plasticity and inertia effects should be included in data analysis when using the method of caustics. For example, it is found that the error introduced through the neglect of plasticity effects in the analysis of data will be small as long as the distance from the crack tip to the initial curve ahead of the tip is more than about twice the plastic zone size. Also, it is found that the error introduced through the neglect of inertial effects will be small as long as the crack speed is less than about 20% of the longitudinal wave speed. (Author)

AD-A092 149/4 PC **A04**/MF **A01**
Naval Research Lab., Washington, DC.
Effective Shear Modulus for Flexural and Extensional Waves in an Unloaded Thick Plate.
Interim rept.,
Pieter S. Dubbelday. 29 Sep 80, 56p Rept no. NRL-8372

Thin-plate theory suffers from failure to properly predict the correct phase speed of bending waves and extensional waves in the limit of high frequency or large thickness. Mindlin has adapted the basic ideas that Timoshenko developed for bars to the case of bending waves in plates to partly correct this situation. Kane and Mindlin have given a similar correction for extensional waves in plates. In this report a new derivation of such correction factors is presented that is based on a comparison of the approximate theory with the results of exact elasticity theory (Lamb waves). Explicit equations are given to compute the effective shear modulus in antisymmetric waves. It is shown analytically that the phase speed calculated with these correction factors for the shear modulus asymptotically approaches the Rayleigh wave speed for high frequency. The same principle of comparison of approximate theory with exact elasticity theory is applied to the other terms in the equations of motion besides those depending on the shear modulus. This has not been entirely successful, but it promises, among other things, to improve the identification of the second root in the quadratic dispersion relation with the first order antisymmetric and symmetric Lamb waves. (Author)

AD-A092 384/7 Not available NTIS
Naval Research Lab., Washington, DC. Shock and Vibration Information Center.
The Shock and Vibration Digest. Volume 12, Number 11,
Judith Nagle-Eshleman. Nov 80, 86p
Availability: Naval Research Lab., Attn: Code 5804. Washington, DC 20375. Annual Rate $100.00 (No copies furnished by DTIC).

Partial contents: Vibration of Turbine Engine Blades by Shell Analysis; Literature Review--Nonlinear rotor dynamics analysis, and Wave-induced ship hull vibrations; and Abstracts from the current literature.

AD-A092 480/3 PC **A02**/MF **A01**
California Univ., Los Angeles. School of Engineering and Applied Science.
Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
Interim rept.,
S. B. Batdorf. Jul 80, 14p Rept no. UCLA-ENG-8040
Contract N00014-76-C-0445
Presented at the International Symposium on Absorbed Specific Energy and/or Strain Energy Density, Budapest, Hungary, 17-19 Sep 80.

Statistical fracture theory can be used to predict the statistics of fracture for equibiaxial tension when the statistics of fracture are known for simple tension. The result depends on the fracture criterion employed. It is shown that energy density theory (and therefore also specific energy theory) lead to better agreement with the experiment than any other well-known fracture criterion. (Author)

PB81-123242 PC **A03**/MF **A01**
California Univ., Berkeley. Earthquake Engineering Research Center.
3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program,
Digambar P. Mondkar, and Graham H. Powell. Jul 80, 43p UCB/EERC-80/22, NSF/RA-800293
Grant NSF-ENV76-04262

This report describes a three-dimensional nonlinear finite element developed for the ANSR-II program. The report contains a description of the element characteristics, the theoretical formulation, and a computer program user's guide.

20L. Solid-State Physics

AD-A091 917/5 PC **A02**/MF **A01**
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
Trends in Surface Atomic Geometries of Compound Semiconductors.
Technical rept.,
C. B. Duke, R. J. Meyer, and P. Mark. 22 Jan 80, 9p Rept no. TR-64
Contract N00014-75-C-0394, Grant DAAG29-77-G-0116
Pub. in The Jnl. of Vacuum Science and Technology, v17 n5 p971-977 Sep/Oct 80. Sponsored in part by grant NSF-ENG75-18529.

No abstract available.

AD-A091 941/5 PC **A03**/MF **A01**
Naval Academy, Annapolis, MD.
Deep Level Transient Spectroscopy as an Experimental Technique.
Final rept. 1979-1980,
Stephen Lester Spehn. 5 Jun 80, 46p Rept no. USNA-TSPR-109
Trident Scholar Project report.

Deep Level Transient Spectroscopy (DLTS) is becoming a popular method of studying defect trapping states in semiconductors. DLTS is sensitive, rapid, and straightforward to analyze; it is able to distinguish between traps of different energy levels as well as different capture cross sections; and it is versatile in that it can provide any desired information on a given defect and can cover a large spectrum of energy levels. DLTS can be used on any type of semiconductor with little or no change in system setup. This makes it both a convenient and powerful technique. This report studies the DLTS technique and introduces a mathematical model of the DLTS data analysis which until now has been somewhat limited in scope. This analysis is considered under a wide range of system setups and its effects are shown graphically. The source of error which causes the greatest uncertainty in results in DLTS is found to be the accuracy with which the applied phase shift can be measured. The results are found to vary by one percent per degree of phase shift. The system is then used to evaluate

trapping states in a sample of Silicon and a sample of GaAlAs. For the Silicon the Energy Level is .433 eV with a prefactor of 1.11 x 10 to the 7th power. For the GaAlAs the Energy Level is .59 eV with a prefactor of 5.24 million. Due to limitations of the DLTS apparatus it was not possible to determine the capture cross section of these samples. An electronic circuit is currently being developed to overcome this difficulty.

AD-A091 961/3 PC **A02**/MF **A01**
Tel-Aviv Univ. (Israel). Dept. of Interdisciplinary Studies.
Interdiffusion of Metals and Semiconductors.
Final research rept. 1 May 79-30 Apr 80,
Y. Shapira. 30 Jun 80, 24p EOARD-TR-80-15
Contract F49620-79-C-0074

Grain boundary diffusion and surface diffusion were studied, concentrating on Ge films on thin polycrystalline Al films. Measurements of the microstructure of the films and their geometrical parameters were made by transmission electron microscopy (TEM) and diffusion was measured by Auger electron spectroscopy (AES). Values for the diffusion coefficients and activation energy were obtained. Qualitative results are presented for sample preparation methods, the effect of oxidation of the Al film on Ge diffusion on and through the film and diffusion in GaAs/Al systems. Applications of the results are also discussed. (Author)

AD-A091 983/7 PC **A03**/MF **A01**
Spire Corp., Bedford, MA.
HgCdTe Fabrication Using Directed Energy Techniques.
Semiannual technical rept. 1 Mar-31 Aug 80,
Anton C. Greenwald, and Robert G. Wolfson.
Sep 80, 49p Rept no. SAR-80-10071-02
Contract MDA903-79-C-0434, ARPA Order-3800

The goal of this research program is to develop hot-wall vacuum deposition and new epitaxy techniques capable of producing HgCdTe semiconductor alloys for future mosaic focal plane applications. The approach is to deposit a large (50 mm o.d.), thin film of CdTe, change its structure to that of a single crystal by either heteroepitaxy or graphoepitaxy, and then modify its composition to Hg sub x Cd sub (1-x) Te by either vapor exchange or ion implantation and annealing. Pulsed electron beam processing will be tested for both heteroepitaxial and graphoepitaxial growth of a thin crystalline film, and for pulse annealing high-dose implants in CdTe. This new technology should result in larger, more uniform crystals of HgCdTe than are currently available (and unsuitable) for the proposed application. Results to date have demonstrated that single-crystal CdTe films up to 17 micrometers thick can be deposited on mica, and that CdTe and HgCdTe can be pulse processed without damaging the surface. Initial nonstoichiometric evaporations have been corrected.

AD-A091 997/7 PC **A02**/MF **A01**
Army Armament Research and Development Command, Watervliet, NY. Large Caliber Weapon Systems Lab.
Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
Technical rept.,
E. Brown, C. G. Homan, and R. K. MacCrone. 31 Mar 80, 11p ARLCB-TR-80038, AD-E440 095
Pub. in Physical Review Letters, v45 n6 p478-481, 11 Aug 80.

The observation of flux exclusion approaching Meissner proportions in pressure-quenched CdS at 77 K is reported. The results can be naturally and simply interpreted on the basis of superconductivity at 77 K. If the superconductive state is not the appropriate description, then a new high-temperature collective quantum state must be invoked.

AD-A092 007/4 Not available NTIS
State Univ. of New York at Albany. Dept. of Physics.
Photodegradation in Silicon.
J. W. Corbett, A. Jaworowski, R. L. Kleinhenz, C. B. Pierce, and N. D. Wilsey. 26 Nov 79, 13p
Contract N00014-75-C-0919, Grant NSF-NSG-3095
Presented at an Informal Meeting on Degradation in Solar Cells, Southhampton (England), 7 Sep 79.
Availability: Pub. in Solar Cells, n2 p11-22 1980 (No copies furnished by DTIC/NTIS).

No abstract available.

AD-A092 073/6 PC **A02**/MF **A01**
McDonnell Douglas Research Labs., St. Louis, MO.
Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
Final rept. 1 Jul 78-30 Jun 80,
C. J. Summers, and J. G. Broerman. 1 Sep 80, 16p AFOSR-TR-80-1149
Contract F49620-78-C-0072

Measurements of the excess-electron lifetime, electron concentration, electron mobility, and photoconductive spectral response were performed on HgCdTe alloys with 17 to 24% CdTe between 5 K and 300 K. The temperature dependence of the electron concentration was well fitted by the Kane band model using energy gap determinations from photoconductivity measurements and assuming donor levels with ionization energies between 0 and 7 meV. The level of sample compensation was determined from fits to the electron mobility, which was limited by impurity scattering below 80 K. The temperature dependence of the excess-electron lifetime was analyzed with a photoconductivity theory which includes intrinsic and defect recombination mechanisms and effects from the surface recombination velocity and incident background photon flux. For all sample compositions, a characteristic dependence of electron lifetime on temperature was observed. Above 100 K the lifetime decreases with temperature and is limited by intrinsic Auger recombination. Below 100 K the lifetime decreases with decreasing temperature because of Shockley-Read recombination. A large increase in the lifetime below 40 K is observed and attributed to minority carrier trapping.

AD-A092 088/4 PC **A02**/MF **A01**
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
Technical rept.,
R. J. Meyer, C. B. Duke, A. Paton, E. SO , and J. L. Yeh. 29 Jan 80, 14p Rept no. TR-65-ONR
Contract N00014-75-C-0394, Grant DAAG29-77-G-0116
Pub. in Physical Review B, v22 n6 p2875-2886, 15 Sep 80.

No abstract available.

AD-A092 354/0 MF **A01**
Technische Hochschule, Darmstadt (Germany, F.R.). Inst. fuer Hochfrequenztechnik.
New Passivation Methods of GaAs.
Final technical rept. 1 Oct 78-31 Jan 80,
H. Adachi, H. L. Hartnagel, S. Hannah, E. Huber, and D. Pavlidis. Jan 80, 167p
Grant DA-ERO-78-G-103
Availability: Microfiche copies only.

With the information provided by previous ESCA studies that there is non-oxidized AS in the oxide near the interface, detailed efforts have been undertaken to produce MOS structures without this deficiency. A two step insulator fabrication scheme was used to obtain improved capacitance-voltage characteristics. Other efforts concerned the deposition of different insulators on GaAs. The passivation of quarternary compound semiconductors was undertaken. Results on the experimental investigation regarding the mechanism of light emission from thin MOS structures are reported. (Author)

AD-A092 387/0 PC **A03**/MF **A01**
Wisconsin Univ.-Milwaukee. Dept. of Physics.
Characterization of Superconductors by Surface Wave Techniques.
Final rept. 1 Oct 75-30 Sep 80,
Moises Levy. 28 Oct 80, 31p AFOSR-TR-80-1173
Grant AFOSR-76-2893

The objective of this research project was to initiate a program to characterize superconductors by means of ultrasonic surface waves. Initially thin films Beta-tungsten and rocksalt superconductors were investigated. Measurements on Nb3Ge determined the superconducting fraction of the film as a function of temperature and the electron mean free path. Measurements on Nb3Sn determined the temperature dependent of superconducting energy gap and the upper critical field of the film. Measurements on several NbN films appear to indicate that there is a new interaction mechanism between the surface wave and the superconducting excitations in this rocksalt structure compound. The initial phase of the study on the effect of nickel films on the propagation of ultrasonic surface waves has been completed. Ultrasonic measurements have been performed on a polycrystalline sample of the ternary reentrant superconductor ErRh4B4 as a function of temperature where it is superconducting. Evidence is obtained for characterizing this superconductor as type II/I and for the fact that the transverse staggered susceptibility is screened by superconducting currents in the mixed state. Ultrasonic measurements have been performed in the superconducting and mixed states of bulk superconductors. (Author)

DOE/ER/01198-1323 PC **A02**/MF **A01**
Illinois Univ. at Urbana-Champaign.
Theory of Core Excitons.
J. D. Dow, H. P. Hjalmarson, O. F. Sankey, R. E. Allen, and H. Buettner. 1980, 4p CONF-800859-5
Contract AC02-76ER01198
International conference on x-ray processes and inner-shell ionization, Stirling, UK, 25 Aug 1980.

The observation of core excitons with binding energies much larger than those of the valence excitons in the same material has posed a long-standing theoretical problem. A proposed solution to this problem is presented, and Frenkel excitons and Wannier excitons are shown to coexist naturally in a single material. (ERA citation 06:001629)

IAE-3151 PC **A02**/MF **A01**
Gosudarstvennyi Komitet po Ispol'zovaniyu Atomnoi Energii SSSR, Moscow. Inst. Atomnoi Energii.
Mechanism of Electric Conductivity in Beryllium Oxide.
Yu. M. Utkin. 1979, 10p
In Russian.
U.S. Sales Only.

The mechanism of electric conductivity in beryllium oxide (BeO) has been studied by means of various methods. Studies were carried out on samples obtained by the method of powder metallurgy in the helium medium at p=1 ata and in vacuum at p <= 10 exp -5 mm Hg in the temperature range from 700 to 1600 deg C. It is found out that the transfer of the charge into BeO is made by beryllium cations. This conclusion is confirmed by the coincidence of values of coefficients of Be selfdiffusion into BeO, obtained from experiments on electric conductivity measuring and by the method of radionuclides. Noted is the dependence of beryllium electric conductivity on the material of electrode used during measurements. (Atomindex citation 11:524905)

IAEA-R-1800-F PC **A02**/MF **A01**
International Atomic Energy Agency, Vienna (Austria).
Effect of Thermal Neutron Irradiation on the Elastic Moduli and Structure of Boron-Containing Crystals. Final Report for the Period 1 October 1976-30 September 1979.
H. Ozkan. Nov 79, 24p
U.S. Sales Only.

The effect of thermal neutron irradiation on the elastic moduli and structure of boron-containing tourmaline, danburite and kurnakovite crystals has been studied. The elastic properties of well-defined tourmalines, danburite and hambergite crystals have been studied. Some of the related data and the results prior to irradiation are published in the Journal of Applied Physics 50, 6005(1979). Ultrasonic measurements indicate that the elastic constants of tourmalines are little affected by neutron irradiation up to about 8 x 10 exp 17 n/cm exp 2 . Detectable damage on tourmalines starts to appear at a fluence of 1 x 10 exp 18 n/cm exp 2 , with a rather rapid decrease of the elastic consiants being observed at higher fluences. Above 2 x 10 exp 18 n/cm exp 2 cracks are generated and tourmalines become rather brittle. Radiation damage mechanisms of the B(n, alpha)Li reaction

suggest that cracks and brittle fracture are due to anisotropic stress concentrations around the displacement cascades and helium bubbles. Rapid decrease of the elastic constants of tourmaline in similar to the observed decrease of the metamict minerals, except that in tourmaline the damage rate is not uniform throughout the sample due to absorption and attenuation of neutrons by B exp 10 . Although the positions and intensities of the Bragg peaks and the background scattering are affected by irradiation, in the short range the crystalline nature of tourmalines is preserved up to the observed flux of 7-8 x 10 exp 18 n/cm exp 2 . Danburite crystals become brittle and they are found to be less stable at a fluence of 8 x 10 exp 17 n/cm exp 2 . This is attributed to their composition, which contains more boron, and to their structure, which is easily cleaved. Kurnakovite becomes amorphous at a fluence of 2.5 x 10 exp 17 n/cm exp 2 . (Atomindex citation 11:519199)

INIS-mf-5641 PC **A05**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Nonlinear Processes of Magnons in Insulating Ferromagnetic Materials.
Tese (Ph.D.),
C. B. de Araujo. Apr 75, 97p
In Portuguese.
U.S. Sales Only.

The representation of coherent states is used to investigate the excitation of magnons by 'parallel pumping', 'perpendicular pumping' and 'phonon pumping'. The stationary regime of the processes is studied with respect to the magnon population and the statistical behavior of the system below and just above the threshold. Particular attention is given to the thermodynamic and the coherence properties of the parametric states. The results show that just above the threshold the generated states become coherent. Also, it is shown that the non-linear processes have characteristics of a second-order phase transition with the pumping power as the 'reservoir variable' and the transverse dynamical magnetization as the 'order parameter'. Finally, the possibilities to extend the theory, its experimental check, and its convenience to study the other nonlinear processes of magnons and phonons in magnetic insulators are discussed. (Atomindex citation 11:519063)

INIS-mf-5643 PC **A07**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Relaxation Rates of Electronic and Nuclear Magnons in Antiferromagnetic Materials.
Tese (Ph.D.),
E. A. Soares. Aug 75, 129p
In Portuguese.
U.S. Sales Only.

The mechanisms that contribute to the spin-wave relaxation rate in antiferromagnetic materials that belong to two different families, one with cubic symmetry and the other one with uniaxial symmetry, are discussed. The typical representatives of these two classes are RbMnF sub 3 and MnF sub 2 , respectively. We have made a unified theory to explain the nuclear and electronic spin-wave relaxation rates in RbMnF sub 3 which is based on a mechanism that arises from the crystalline inhomogeneities. The theory was good for both cases, where three-magnon confluence processes without momentum-conservation (due to inhomogeneities) were able to explain the general features of the relaxation rates. We have also performed measurements of the AFMR linewidth of MnF sub 2 doped with different concentrations of cobalt and taken care of minimizing the radiation damping. The experimental data were explained by non-momentum conserving magnon-phonon processes. Our results lead us to believe that non-momentum conserving processes are the most suitable to explain relaxation rates in materials where one can not define a translational simmetry in the lattice. (Atomindex citation 11:519223)

INIS-mf-5646 PC **A05**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Calculation of the Electronic Structure and Contact Hyperfine Parameters of Interstitial Hydrogen in Alkaline - Earth Fluorides.
Tese (M.Sc.),
L. E. M. C. de Oliveira. Jan 76, 93p
In Portuguese.
U.S. Sales Only.

The electronic structure of the interstitial hydrogen atom in alkaline-earth fluorides has been studied using the self-consistent-field multiple-scattering X alpha method. In the calculations a cluster constituted by the hydrogen atom and its first anion and cation neighbors has been used. The contact parameters with the proton and the fluorine nuclei have been evaluated. The agreement obtained with the experimental results is in general good and indicates that this method is also appropriate to study defects in ionic crystals. (Atomindex citation 11:519197)

INIS-mf-5647 PC **A07**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Calculation of the Hyperfine Constants of the V /sub K/ Center in CaF sub 2 , SrF sub 2 and BaF sub 2.
R. F. Bufaical. Mar 75, 136p
In Portuguese.Thesis.
U.S. Sales Only.

The magnetic hyperfine constants of the V /sub K/ center in CaF sub 2 , SrF sub 2 and BaF sub 2 have been calculated, with the aid of a phenomenological model, based on the F exp -2 'central molecule', to describe the wave function of the defect. The introduction of covalence with the ions neighboring the 'central molecule' has shown that this is a better description for the defect than a simple 'central molecule' model. It was also shown that the results for the hyperfine constants are strongly dependent on the relaxations of these neighboring ions, which have been determined by fitting the experimental data. The present results are compared with other previous calculations where similar and different methods have been used. A better description for the wave function of the defect is suggested. (Atomindex citation 11:519087)

INIS-mf-5648 PC **A06**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Determination of Fano's Factor in Semiconductors.
Tese (M.Sc.),
P. R. S. Gomes. Jul 75, 123p
In Portuguese.
U.S. Sales Only.

A study was made of three different semiconductor detectors: intrinsic germanium, germanium drifted with lithium, and silicon drifted with lithium. In the efficiency measurements for these detectors, special attention was paid to the escape of the germanium X-rays produced within the detector. The principal part of this work is the determination of the Fano factor for germanium and silicon. A great deal of attention was given to the analysis of experimental results. Different criteria for eliminating the linewidth contribution due to charge collection fluctuations lead to widely different values and have caused great controversy over the value of the Fano factor. Measurements were made for the three detectors using energies of 14.4 keV, 35.4 keV, 46.5 keV, 59.5 keV, 81 keV, 88 keV, 122 keV and 136.5 keV and the results indicate a Fano factor of 0.105 +- 0.004 for germanium and 0.130 +- 0.120 for silicon. (Atomindex citation 11:519136)

INIS-mf-5654 PC **A02**/MF **A01**
Universidade Federal Fluminense, Niteroi (Brazil). Inst. de Fisica.
Magnetic Excitations in Amorphous Ferromagnets.
M. A. Continentino, and N. Rivier. 25p
U.S. Sales Only.

The propagation of magnetic excitations in amorphous ferromagnets is studied from the point of view of the theory of random frequency modulation. It is shown that the spin waves in the hydrodynamic limit are well described by perturbation theory while the roton-like magnetic excitations with wavevector about the peak in the structure factor are not. A criterion of validity of perturbation theory is found which is identical to a narrowing condition in magnetic resonance. (Atomindex citation 11:519100)

KFKI-1980-03 PC **A02**/MF **A01**
Kozponti Fizikai Kutato Intezet, Budapest (Hungary).
Manifestation of the Frustration Effect in S = 1/2 Quantum Spin Systems.
P. Fazekas. Jan 80, 13p
U.S. Sales Only.

The ground state properties of S = 1/2 anisotropic Heisenberg magnets with plaquette frustration are investigated. The models can be classified according to whether a straightforward generalization of the Marshall (1955) Ansatz can be applied, or the ground state has to be approximated by a linear combination of Ising ground states. In the former case, the quantum ground state may have a zero point entropy. In the latter case, a unique ground state with quantum-liquid-like coherence properties is postulated, generalizing an earlier suggestion by Fazekas and Anderson. (Atomindex citation 11:519118)

LYCEN-7923 PC **A02**/MF **A01**
Lyon-1 Univ., Villeurbanne (France). Inst. de Physique Nucleaire.
SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
H. Chermette, P. Pertosa, F. M. Michel-Calendini, and J. Weber. Apr 79, 12p
U.S. Sales Only.

The ionization energies of titanium and oxygen states in KTaO sub 3 crystal have been investigated through the self-consistent field X alpha scattered-wave method, with the Slater transition state model, applied to a TaO sub 6-7 cluster of octaedral symmetry. Ionization energies and electronic charge distribution are compared to XPS data and related to results obtained from band computations. (Atomindex citation 11:519094)

PUC-tn-17/79 PC **A02**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
H. S. Brandi, and B. Koiller. Jul 79, 8p
U.S. Sales Only.

The Cluster-Bethe lattice (CBL) method to calculate the electronic structure of the hydrogen centers U, U sub 1 , U sub 2 , U sub 3 in alkali halides has been used. The results show the adequacy of the CBL in the interpretation of the nature of the optical transitions. (Atomindex citation 11:519083)

20M. Thermodynamics

AD-A092 142/9 PC **A04**/MF **A01**
Illinois Univ. at Urbana-Champaign.
Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
S. Kou, S. C. Hsu, and R. Mehrabian. 22 Mar 79, 58p
Contract N00014-78-C-0275

Rapid melting and solidification of a semi-infinite substrate subjected to a high intensity heat flux over a circular region on its bounding surface moving with a constant velocity is considered. General expressions are developed for the coefficients in the finite difference equation governing the heat transfer in moving orthogonal curvilinear coordinate systems. These expressions are reduced to their specific forms in terms of dimensionless nodal temperature and enthalpy for a moving oblate spheroidal coordinate system. Quasi-steady state conditions are assumed and the thermal properties of the substrate in the liquid and solid phase are considered constant and equal. It is also assumed that the substrate, pure aluminum used as example, melts and solidifies at a single temperature. Temperature distributions in the molten region and the adjacent heat affected zone are computed along with the liquid-solid interface shape, its velocity and other important solidification variables. Both uniform and Gaussian heat flux distributions within the circular region are considered. The results are presented in their most gen-

eral form - in terms of dimensionless numbers when possible.

INIS-mf-5642 PC **A11**/MF **A01**
Pontificia Univ. Catolica do Rio de Janeiro (Brazil). Inst. de Fisica.
Three-Critical Phenomena in the He exp 3 -He exp 4 Mixture.
Tese (M.Sc.),
C. A. A. de Carvalho Filho. Jul 76, 228p
In Portuguese.
U.S. Sales Only.

A review of the phenomenology of tricritical behavior in He exp 3 -He exp 4 mixtures is made. On the basis of a model proposed by Blume, Emery and Griffiths the tricritical transition is investigated by means of the Renormalization Group by making use of the Callan-Symanzik equation and usual perturbative methods of relativistic quantum field theory. Mean-field tricritical exponents and logarithmic corrections are found in a /sup n/ unified context. The structure of scaling laws is also studied. (Atomindex citation 11:518758)

20N. Wave Propagation

AD-A092 017/3 PC **A04**/MF **A01**
George Washington Univ., Washington, DC. Dept of Electrical Engineering and Computer Science.
Discrete Scattering Approach to Vegetation Modeling.
Final rept.,
Roger H. Lang. Apr 80, 58p ETL-0215
Contract DAAK70-77-C-0142

This report studies microwave backscattering from a forest canopy which is modeled by a collection of dielectric discs with random orientation and position. The report begins by analyzing the mean field in a tenuous distribution of discrete scatterers. The correlation of the field is found by employing the distorted Born approximation. The above is then specialized to a half space of discrete scatterers with azimuthal symmetry. Horizontal, vertical and cross polarized backscattering coefficients for the half space are found. A comparison with experiment is made for the special case of lossy dielectric discs. (Author)

AD-A092 031/4 PC **A09**/MF **A01**
IIT Research Inst., Chicago, IL.
Evaluation of Time Domain EM Coupling Techniques. Volume I.
Final technical rept. 7 Dec 78-29 Feb 80,
Allen Taflove. Aug 80, 176p RADC-TR-80-251-VOL-1
Contracts F30602-79-C-0039, F30602-77-C-0163
See also Volume 2, AD-A092 032.

This research program investigated a new tool for the analysis of electromagnetic coupling and shielding problems: the finite-difference, time-domain (FD-TD) solution of Maxwell's equations. The objective of the program was to evaluate the suitability of the FD-TD method to determine the amount of electromagnetic coupling through an aperture into an enclosed conducting container and the interaction and coupling of the penetrating field with internal electronics. Two specific container models were used for the evaluation. The first, a conducting cylinder with one open end; the other, the guidance section of a missile. Each of these two configurations were modeled to calculate the electromagnetic field coupled into the structure. (Author)

AD-A092 032/2 PC **A05**/MF **A01**
IIT Research Inst., Chicago, IL.
Evaluation of Time Domain EM Coupling Techniques. Volume II.
Final technical rept. 7 Dec 78-29 Feb 80,
Allen Taflove. Aug 80, 99p RADC-TR-80-251-VOL-2
Contract F30602-79-C-0039
See also Volume 1, AD-A092 031.

This research program investigated a new tool for the analysis of electromagnetic coupling and shielding problems: the finite-difference, time-domain (FD-TD) solution of Maxwell's equations. The objective of the program was to evaluate the suitability of the FD-TD method to determine the amount of electromagnetic coupling through an aperture into an enclosed conducting container and the interaction and coupling of the penetrating fields with internal electronics. Two specific container models were used for the evaluation. The first, a conducting cylinder with one open end; and the other, the guidance section of a missile. Each of these two configurations was modeled to calculate the electromagnetic field coupled into the structure. (Author)

AD-A092 297/1 PC **A18**/MF **A01**
Megatek Corp., San Diego, CA.
Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
Final rept.,
H. V. Hitney, E. W. Pasahow, and M. E. O'Brian.
7 Jul 80, 412p R2018-059-IF-2, NOSC-TD-365
Contract N00123-78-C-0043
See also AD-A067 984.

IREPS assesses the refractive effects of the lower atmosphere for Naval electromagnetic systems operating above 100 MHz, including radar, uhf and microwave communications, electronic warfare, and missile guidance. This specification defines and specifies the computer program functions required by IREPS. (Author)

AD-A092 305/2 PC **A07**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Concept Evaluation: Field Feedback Computation of Electromagnetic Scattering.
Master's thesis,
Bryant E. Welch. Jun 80, 137p

A new method of numerical solution for time-harmonic field scattering problems involving inhomogeneous bodies of revolution is presented. A simple single-loop multiport feedback system is driven by the incident field. The forward path transfer matrix, found by use of the finite-element method, translates the total near-field into the body-surface field. The feedback path matrix is established by the magnetic vector potential formulation; it translates the body-surface currents into the scattered near-field. The thin-wire scattering problem is formulated in terms of this field feedback method. Results of this computation are compared in graphical form to those found by Hallen's integral equation solution of the scattering problem for several cases of interest. (Author)

AD-A092 440/7 PC **A04**/MF **A01**
Air Force Inst. of Tech., Wright-Patterson AFB, OH.
Analysis of a Simulated Source of Electromagnetic Pulses.
Master's thesis,
Usto Francis Eugene Schulz. Feb 80, 62p Rept no. AFIT-CI-80-4T

This thesis describes an effort to develop a source of plane wave electromagnetic pulses for use in an experiment which was designed to measure the electromagnetic field strength across an axial slot in an infinite circular cylinder. Two approaches are described. One design approach attempted to simulate magnetic line source with an array of small current loops. The second approach attempted to simulate a magnetic line source with an array of long monopoles. It was concluded that a source of plane wave pulses could be constructed, but not without degradation in rise time. (Author)

AD-A092 501/6 PC **A03**/MF **A01**
Harry Diamond Labs., Adelphi, MD.
Upgrading the AURORA Simulator.
Technical memo.,
Alexander G. Stewart. Oct 80, 42p Rept no. HDL-TM-80-28

The necessary degree of control was acquired over those machine parameters that determine the bremsstrahlung dose output of the simulator, thereby improving the simulator efficiency and extending its range of applications. At a given charge voltage on the Marx generator, average dose output at the center of the test volume (TVC) was increased by about 20 percent, the peak dose output exceeded 50 krad (TVC) for the first time, and reproducible low dose (50 rad) at low beam energy (4 MeV) was established. One result of these improvements is that overall machine maintenance time has been reduced. (Author)

21

PROPULSION AND FUELS

21B. Combustion and Ignition

AD-A092 234/4 PC **A11**/MF **A01**
Naval Research Lab., Washington, DC.
Detailed Modelling of Combustion Systems.
Interim rept.,
Elaine S. Oran, and Jay P. Boris. 12 Nov 80, 226p Rept no. NRL-MR-4371

The purpose of this paper is to acquaint the reader with some of the basic principles of detailed modelling as applied to combustion systems. Detailed modelling is also known as numerical simulation. It can be used to describe the chemical and physical evolution of a complex reactive flow system by solving numerically the governing time-dependent conservation equations for mass, momentum and energy. Solving these equations requires input data such as the species present, the chemical reactions that can occur, transport coefficients for viscosity, thermal conductivity, molecular diffusion, and thermal diffusion, the equation of state for the various materials present, and a set of boundary, source and initial conditions. Given this information, the equations contain in principle all the information we might want from the largest macroscopic space scales down to the point where the fluid approximation itself breaks down. Flame, detonation, turbulence phenomena, and all multidimensional effects are included in the solutions of these equations. An important goal of detailed modelling is to develop a computational model with a well-understood range of validity. This model can then be used in a predictive role to evaluate the feasibility and validity of new concepts. It can also be used to interpret experimental measurements, to extend our knowledge to new parameter regimes, and perhaps as an engineering design tool. Throughout these various applications, the model may serve as an excellent way to test our understanding of the interactions of the individual physical processes which control the behavior of a reactive flow system.

CONF-800814-25 PC **A02**/MF **A01**
Institute of Gas Technology, Chicago, IL.
Formulas for Calculating the Heating Value of Coal and Coal Char: Development, Tests, and Uses.
D. M. Mason, and K. Gandhi. 1980, 12p
Contract AC01-76ET10251
180. American Chemical Society meeting/2. chemical congress of the North American Continent, San Francisco, CA, USA, 24 Aug 1980.

A new five-term formula for calculating the heating value of coal from its carbon, hydrogen, sulfur and ash content was obtained by regression analysis of data on 775 samples of US coals of all ranks. The standard deviation of the calculated value from the observed value was 129 Btu/lb, compared to apparent standard deviations ranging from 178 to 229 Btu/lb obtained from the Dulong, Boie, Grummel and Davis, and Mott and Spooner formulas. An analysis of the variance of the difference between observed and calculated values obtained with the new formula on IGT coal data indicated that at least 77% is contributed by the variance of the experimental determinations; the re-

mainder can be attributed to the effect of mineral matter and outlying experimental determinations. Application of the formula to coal oxidatively pretreated at 750 exp 0 F to destroy agglomerating properties yields a bias indicating that the heat of formation is higher than expected from elemental and ash composition by about 140 Btu/lb; this is attributed to differences in structure (bonding). The formula gives satisfactory results on higher temperature HYGAS chars, and with application of a bias correction on pretreated coal. Thus, the formula is advantageous for use in the computer modelling of coal conversion processes and for monitoring test data on coal and char. (ERA citation 06:000162)

DOE/ET/10379-T3 PC **A12**/MF **A01**
Exxon Research and Engineering Co., Florham Park, NJ. Engineering and Technology Dept.
Industrial Application Fluidized Bed Combustion: Indirect Fired Process Heaters. Final Program Report.
266p
Contract AC21-76ET10379

A study has been completed to assess the potential application of coal-fired fluidized-bed combustion technology to petroleum plant process heaters. The study concentrated on those issues peculiar to process heaters which were not being investigated by the many boiler oriented programs being pursued by others. Experimental phases of the program investigated heat transfer and fluidization characteristics when an array of large diameter tubes (up to 6") were immersed in a fluidized bed of limestone. A range of tube configurations and bed compositions were evaluated. Other tests investigated the process variables affecting hydrocarbon coking in tubes exposed to the high heat flux environment of a fluidized bed. Program generated data were tested and validated in a 12 MBtu/hr coal fired FBC test combustor where both heat transfer data and unit response to process changes were demonstrated. An assessment was made of potential application opportunities in typical petroleum refineries. Finally, a matrix of commercial sized heater designs was prepared to evaluate the impact of changes in size and service requirements on heater costs and physical configuration. The study results fully support the technical feasibility of FBC process heaters but suggest that nontechnical issues such as siting and logistics problems associated with handling solid fuels and wastes within widely dispersed and normally congested process areas may limit near term applications. Alternatives that would directionally improve application opportunities are identified. (ERA citation 06:001232)

21D. Fuels

CONF-791082-(Sum.) PC **A99**/MF **A01**
Department of Energy, Washington, DC. Office of Transportation Programs.
Highway Vehicle Systems Contractors Coordination Meeting. Seventeenth Summary Report.
1979, 659p
DOE automotive technology development contractors coordination meeting, Dearborn, MI, USA, 23 Oct 1979.

Separate abstracts was prepared for each of the 62 papers presented at the Contractors' Coordination meeting on highway vehicle systems. One paper had previously appeared in DOE's data base. (ERA citation 05:027334)

CONF-801079-2 PC **A02**/MF **A01**
Oak Ridge National Lab., TN.
Materials for Conoco Zinc Chloride Hydrocracking Process.
V. B. Baylor, J. R. Keiser, and J. H. DeVan. 1980, 5p
Contract W-7405-ENG-26
Annual conference on materials for coal conversion and utilization, Gaithersburg, MD, USA, 6 Oct 1980.

Use of zinc chloride to augment hydrogenation of coal and yield a high-octane gasoline product is the most significant feature of a coal liquefaction process being developed by Conoco Coal Development Company. The zinc chloride catalyst is regenerated in a fluidized sand bed, where the spent melt is mixed with air and hydrogen chloride at about 1000 exp 0 C. Recovery is completed at 370 exp 0 C in a condenser, where the zinc chloride is collected and the oxygen and sulfur are separated as H sub 2 O and SO sub 2 . The economic viability of the entire process is highly dependent on almost complete recovery of the zinc chloride. The severe environmental conditions of this recovery process cause unique materials problems. Although high-temperature oxidation and sulfidation are being studied in related programs, suitable materials to resist their combined effects along with those of chlorides have not yet been specifically addressed. Common engineering materials, such as the austenitic stainless steels and many nickel-base alloys, are unsuitable because of their inability to tolerate the elevated temperatures and sulfidation, respectively. The objectives of this task are to screen various metallic and ceramic materials for resistance to the zinc chloride recovery system environment and to determine the nature of the attack by exposing coupons to the simulated environment in the laboratory. (ERA citation 06:000096)

DOE/EIA-0032 PC **A02**/MF **A01**
Department of Energy, Washington, DC. Energy Information Administration.
Monthly Petroleum Product Price Report.
Nov 77, 20p

Monthly report supplies national weighted average prices on a monthly basis at different levels of the marketing chain, for petroleum products sold by refiners, large resellers, gas plant operators, and importers. Data are for the year to date and previous year. Some historic data are included to indicate trends. Gasoline price data are collected from retail gasoline dealers. Heating oil prices come from sellers of heating oil to ultimate consumers. A glossary of petroleum products is appended. Petroleum products include motor gasoline, distillate fuel oil, diesel fuel, heating oil, residual fuel oil, aviation fuel, kerosene, petrochemical feedstocks, propane, butane, ethane, and natural gasoline. 12 tables. (ERA citation 06:000214)

DOE/ET/13395-1/2 PC **A05**/MF **A01**
Colorado School of Mines, Golden.
Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, April-June 1979 and July-September 1979.
A. J. Kidnay, and V. F. Yesavage. 1979, 91p
Contract AC22-79ET13395

Enthalpy measurements on a coal-derived naphtha and middle distillate, both produced by the SRC-II process, were made using flow calorimetry. The accuracy of the measurements, as reported by Omid, was within +- 1% of the measured enthalpy differences, delta H. Experimental data for the naphtha were obtained over a pressure range of 100-300 psia and temperatures from 148 exp 0 to 456 exp 0 F. The middle distillate enthalpy measurements were made in the pressure and temperature ranges of 130 to 1000 psia, and 157 exp 0 to 675 exp 0 F, respectively. The methods of prediction of enthalpy developed for petroleum fractions were unsatisfactory when applied to the above data. A negative bias was observed in the predicted enthalpy values for several of the coal-liquids. Based on these results, it was theorized that the high experimental enthalpy values for coal-liquids were due to an energy of association attributed, primarily, to hydrogen-bonding effects. The petroleum-fraction enthalpy correlations were then tested on the experimental data for pure compounds, both associating and non-associating. The predicted values compared very well with the experimental results for non-associating model compounds. However, for associating model compounds the predicted enthalpy values were considerably lower than their experimental data. This served to confirm the basic premise that the high experimental enthalpy values, for model compounds and coal liquids, were a direct consequence of an energy of association attributed, primarily, to hydrogen-bonding effects. (ERA citation 06:000111)

DOE/ET/13395-3/4 PC **A06**/MF **A01**
Colorado School of Mines, Golden.
Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, October-December 1979 and January-March 1980.
A. J. Kidnay, and V. F. Vesavage. 1980, 103p
Contract AC22-79ET13395

A survey of the existing methods for detecting and quantifying the effect of association, owing to hydrogen-bonding, resulted in the selection of viscosity measurements and cryoscopic molecular weight determinations as the two techniques most suitable for determining the effect of association. Viscosity measurements from 70 exp 0 to 190 exp 0 F and at atmospheric pressure were made on 8 pure compounds and 7 coal liquids. The accuracy of the measurements was determined to be within +-5% of the measured value. Viscous enthalpies were then calculated using the above data and effective molecular weights determined. (ERA citation 06:000112)

DOE/ET/13395-5 PC **A05**/MF **A01**
Colorado School of Mines, Golden.
Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, April-June 1980.
A. J. Kidnay, and V. F. Yesavage. 15 Sep 80, 76p
Contract AC22-79ET13395

Cryoscopic molecular weight determinations were made on 5 pure compounds and 7 coal liquids. The accuracy of the measurements, based on the data for pure compounds, was estimated to be within +- 10% of the actual value. A linear relationship between the molecular weight and concentration of sample in the benzene solvent was observed. It was found that the slope of the line correlated directly with the absolute error, between the predicted and experimental enthalpy values, for all the liquids studied. As the slope increased, the absolute error also increased. Thus, the cryoscopic molecular weight determinations, as a function of concentration, were found to be an excellent indication of the extent and effect of association in any given fluid; and, as such, should be preferred as a characterizing tool, over the viscosity measurements, or any combination of the two. (ERA citation 06:000113)

DOE/ET/13395-6 PC **A04**/MF **A01**
Colorado School of Mines, Golden. Dept. of Chemical and Petroleum Refining Engineering.
Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, July-September 1980.
A. J. Kidnay, and V. F. Yesavage. 15 Sep 80, 67p
Contract AC22-79ET13395

Equipment modifications to a Freon 11 boil-off type calorimeter are described. The calorimetric system was used to measure the enthalpies of thiophene experimentally. Data were taken over a temperature range of 100 exp 0 F to 750 exp 0 F at pressures of 50, 100, 200, 400, 600, 825.9 (the critical), 1000, and 1500 psia. Thermodynamic properties derived from the data are compared to values in the literature, and the agreement is exceptionally good. The data are then compared directly to results calculated by means of two correlations: a modification of the BWR equation of state by Kesler and Lee, and a modified SRK equation of state method. Both correlations are found to work well in predicting the enthalpy of thiophene. (ERA citation 06:000114)

DOE/ET/20050-T1 PC **A08**/MF **A01**
Dynatech R/D Co., Cambridge, MA.
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
P. F. Levy, J. E. Sanderson, E. Ashare, D. L. Wise, and M. S. Molyneaux. 1980, 157p
Contract AC02-77ET20050

The current program to convert biomass into liquid hydrocarbon fuels is an extension of a previous program to ferment marine algae to acetic acid. In that study it was found that marine algae could be converted to higher aliphatic organic acids and that these acids could be readily removed from the fermentation broth by membrane or liquid-liquid

extraction. It was then proposed to convert these higher organic acids via Kolbe electrolysis to aliphatic hydrocarbons, which may be used as a diesel fuel. The specific goals for the current program are: (1) establish conditions under which substrates other than marine algae may be converted in good yield to organic acids, here the primary task is methane suppression; (2) modify the current 300-liter fixed packed bed batch fermenter to operate in a continuous mode; (3) change from membrane extraction of organic acids to liquid-liquid extraction; (4) optimize the energy balance of the electrolytic oxidation process, the primary task is to reduce the working potential required for the electrolysis while maintaining an adequate current density; (5) scale the entire process up to match the output of the 300 liter fermenter; and (6) design pilot plant and commercial size plant (1000 tons/day) processes for converting biomass to liquid hydrocarbon fuels and perform an economic analysis for the 1000 ton/day design. (ERA citation 06:000382)

DOE/LC/10020-T4 PC **A09**/MF **A01**
Colorado School of Mines, Golden.
Sorption of H sub 2 S on Spent Shale in Packed Beds.
E. Pedram. Nov 77, 178p
Contract AC20-79LC10020

This study includes the adsorption of H sub 2 S on oil shale that had been retorted for two hours at various temperatures ranging from 300 to 1000 exp 0 C. An experimental flow adsorption apparatus was designed and constructed, and breakthrough curves were obtained at 10, 25, and 60 exp 0 C. Gas concentrations of 1000, 2000, 3000, 5000, 7000, and 10,000 ppM H sub 2 S in dry nitrogen were used. Equilibrium isotherms were calculated from the adsorption data and were modeled by the Langmuir, Freundlich, and Dubinin-Polanyi equations. Experimental breakthrough curves were compared with a theoretical model of the flow system and diffusion coefficients were estimated at 10, 25, and 60 exp 0 C for the concentrations 1000, 5000, and10,000 ppM H sub 2 S in nitrogen. (ERA citation 06:000254)

JAERI-M-8490 PC **A02**/MF **A01**
Japan Atomic Energy Research Inst., Tokyo.
Thermochemical and Radiation Chemical Hydrogen Production.
S. Sato, Y. Ikezoe, S. Shimizu, and H. Nakajima. Oct 79, 21p
U.S. Sales Only.

In search of closed-cycle hydrogen production processes by nuclear energy, thermochemical and radiation chemical reactions have been studied which are related to candidate processes. In a hopeful thermochemical process, nickel, iodine and sulfur are used (NIS process). This process is an improved iodine-sulfur process, and is characterized by the separation of nickel iodide and sulfate by solvent extraction and the high temperature decomposition of sulfur trioxide in the absence of water. Experimental results of main unit operations are described. Another feasible process with carbon dioxide was also studied using ferrous iodide. For radiation chemical hydrogen production, radiolysis of carbon dioxide was studied by gamma-rays and reactor radiations containing fission fragments, and with nitrogen dioxide and propane as additives. The mechanism of reoxidation of carbon monoxide, the back reaction, is discussed, because the back reaction determines the carbon monoxide yield. (Atomindex citation 11:524812)

LBL-11167 PC **A02**/MF **A01**
California Univ., Berkeley. Lawrence Berkeley Lab.
Speciation of Trace Organic Ligands and Inorganic and Organometallic Compounds in Oil Shale Process Waters.
R. H. Fish. Jun 80, 9p CONF-800425-7
Contract W-7405-ENG-48
13. oil shale symposium, Golden, CO, USA, 16 Apr 1980.

The isolation and identification of organic ligands and inorganic and organometallic compounds in seven oil shale process waters has been carried out using a number of analytical techniques. Organic ligands, potentially associated with trace metals in the oil shale process waters, were either isolated, after methylene chloride extraction, by low pressure liquid chromatography or directly derivatized using lyophilized samples and then identified by capillary column gas chromatography in combination with electron impact mass spectrometry. Using these techniques, we were able to identify mono- and dicarboxylic acids, substituted phenols, substituted pyridines, aliphatic nitrogen heterocyclics, and substituted quinoline compounds. The inorganic and organometallic compounds in these process waters were directly separated by high performance liquid chromatography and detected by graphite furnace atomic absorption spectroscopy (HPLC-GFAA). These initial studies resulted in tentative identification of several inorganic and organoarsenic compounds. A review of our analytical techniques and the identified compounds will be presented in this paper. (ERA citation 06:000252)

PAT-APPL-6-119 738 PC **A02**/MF **A01**
Department of Energy, Washington, DC.
Thermochemical Generation of Hydrogen and Oxygen from Water.
Patent Application,
P. R. Robinson, and C. E. Bamberger. Filed 8 Feb 80, 13p
Contract W-7405-ENG-26
This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

A thermochemical cyclic process for the production of hydrogen exploits the reaction between sodium manganate (NaMnO sub 2) and titanium dioxide (TiO sub 2) to form sodium titanate (Na sub 2 TiO sub 3), manganese (II) titanate (MnTiO sub 3) and oxygen. The titanate mixture is treated with sodium hydroxide, in the presence of steam, to form sodium titanate, sodium manganate (III), water and hydrogen. The sodium titanate-manganate (III) mixture is treated with water to form sodium manganate (III), titanium dioxide and sodium hydroxide. Sodium manganate (III) and titanium dioxide are recycled following dissolution of sodium hydroxide in water. (ERA citation 06:002131)

21E. Jet and Gas Turbine Engines

AD-A091 905/0 PC **A02**/MF **A01**
Virginia Univ., Charlottesville. Dept. of Mechanical and Aerospace Engineering.
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
Final rept. 15 Jan 77-31 May 80,
E. J. Gunter, L. E. Barrett, and P. E. Allaire. Nov 80, 13p ARO-14100.1-E
Contract DAAG29-77-C-0009

Application of the finite length correction factor for the analysis of the finite length squeeze film bearings has been made, and a method has been found to be highly efficient. The modal transient program, to include linear rotor acceleration, has been developed and various analysis of rotor systems has been done. A rapid method to calculate the load capacity and dynamics characteristics of a journal or squeeze film bearing has been developed using a finite element approach coupled with an end leakage correction factor. A procedure has been developed to balance a multi-stage turbine without having to first apply trial weights to generate a set of influence coefficients. This procedure represents a major advance in the technology of flexible rotor balancing. It is incorporated into a mini computer system which can collect and analyze the rotor data. (Author)

AD-A091 924/1 PC **A05**/MF **A01**
Illinois Univ. at Urbana-Champaign. Mechanical Engineering Lab.
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
Technical rept. Jun 78-Jan 80,
J. C. Dutton, and A. L. Addy. Apr 80, 96p UILU-ENG-80-4005, ARO-13737.3-EX, ARO-16719.2-E
Contract DAAG29-79-C-0184, Grant DAAG29-76-G-0200

A FORTRAN computer program has been developed for the analysis of transonic throat flowfields in annular, planar, and axisymmetric supersonic nozzles. The program evaluates the series expansion solution developed by Dutton and Addy. The subroutines in the code are described together with the definitions of the input and output variables, detailed input instructions, and an example input file with the corresponding output. A brief summary of the theory upon which the expansion solution is based is also included. (Author)

AD-A092 028/0 PC **A05**/MF **A01**
Air Force Aero Propulsion Lab., Wright-Patterson AFB, OH.
Determination of Flow Direction with Pressure Probes.
Final rept. 1 Jun 78-1 Jul 79,
G. David Huffman, Douglas C. Rabe, D. N. Barlow, and N. Poti. Jul 79, 87p Rept no. AFAPL-TR-79-2077

This report documents the results of a theoretical and experimental study of flow direction probes for use in turbomachines. The theoretical analyses employ slender body theory with the resulting expressions converted into angular and averaged pressure coefficients. These are in turn used to quantify the effects of probe geometry on probe sensitivity. Furthermore, the analytic expressions are employed to predict the impact of probe alignment on the angular and averaged pressure coefficients. (Author)

AD-A092 043/9 MF **A01**
Naval Air Development Center, Warminster, PA.
Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978,
R. M. Standahar, R. R. Shorey, A. Pressman, and L. Finizie. 1978, 383p
Availability: Microfiche copies only.

The NADC (Naval Air Development Center) has done engine cost estimating work on development, production, and operating and support costs. Although production costs were first studied by NADC, in this presentation development costs will be discussed next and, O&S (Operation and Support) costs will be discussed last. (Author)

AD-A092 138/7 PC **A05**/MF **A01**
Naval Postgraduate School, Monterey, CA.
Validation of a Two-Dimensional Primitive Variable Computer Code for Flow Fields in Jet Engine Test Cells.
Master's thesis,
Paul Joseph Mallon. Jun 80, 76p

Pressure and velocity data were collected in a full scale jet engine test cell in order to validate the predictive accuracy of a two-dimensional and axisymmetric primitive variable computer code. It was found that the model reasonably predicted the velocity profiles in the augmentor tube. Inaccuracy increased at higher engine thrust settings at positions far downstream in the augmentor tube. Predicted pressure profiles were reasonable but the magnitudes were in considerable error at high flow rates. (Author)

AD-A092 229/4 PC **A04**/MF **A01**
Calspan Advanced Technology Center, Buffalo, NY.
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
Final rept. 1 Feb 79-31 Mar 80,
Michael G. Dunn. 31 Mar 80, 67p CALSPAN-6486-A-1, DNA-5268F
Contract DNA001-79-C-0155

The work discussed in this report represents a technology development program in which an experimental technique has been developed for the performance of controlled laboratory measurements of simulated nuclear blast response of airbreathing propulsion systems. The technology program utilized an available J-85-5 turbojet engine located in the test section of the Calspan Ludwieg-tube facility. Significant modifications, described herein, were made to this facility in order to adapt it to the desired configuration. The J-85-5

engine had previously been used at Calspan for other purposes and thus came equipped with a total of eight pressure transducers at four axial locations along with compressor section. These transducers have a frequency response on the order of 40 KHz. Preliminary comparisons have been made between the measured pressure histories at selected compressor locations and predicted pressure histories using a simple computer code. The development of the code was initiated under this contract and completed as part of an ongoing IR&D effort at Calspan in computational fluid dynamics and problem areas related to engine dynamics. (Author)

AD-A092 255/9 PC **A04**/MF **A01**
Purdue Univ., Lafayette, IN. Combustion Lab.
AGT-1500 Combustor and Fuel Effects Modeling.
Final technical rept. 1 Sep 78-31 Aug 80,
P. A. Leonard, J. E. Peters, and A. M. Mellor. 1 Oct 80, 72p PURDU-CL-80-03, ARO-15642.5-E
Contract DAAG29-79-C-0169, Grant DAAG29-78-G-0092

The influence of alternative fuels on gas turbine engine performance is considered analytically. Broad specification or alternative fuels may have viscosities and wider boiling point temperature distributions which adversely affect atomization and vaporization processes within gas turbine combustors, leading to performance penalties in ignition, lean blowoff and combustion efficiency. These performance measures have been modeled by considering ratios of characteristic times which describe the controlling physical processes of fluid mechanic mixing, kinetics and fuel evaporation. Semi-empirical models are developed which describe lean blowoff, ignition and combustion efficiency of the AVCO-Lycoming AGT-1500 combustor and other combustors. These expressions can be used to assist design of fuel tolerant combustors, and to assess impacts associated with fuel type selection. (Author)

AD-A092 291/4 PC **A04**/MF **A01**
Federal Aviation Administration Technical Center, Atlantic City, NJ.
Exhaust Emission Characteristics and Variability for Maintained General Electric CF6-50 Turbofan Engines.
Final rept. Jul-Oct 79,
Gary Frings. Sep 80, 57p Rept no. FAA-CT-80-36

Five General Electric (GE) CF6-50 turbofan engines were tested at the GE overhaul facility in Ontario, California, to quantify and determine the variability of the exhaust emission levels. The effects of heavy maintenance on these emission levels were also studied. Only two of the engines tested actually received major maintenance. Consequently, the data collected is limited in quantity. Conclusions, observations, and recommendations are presented based on this limited data base. No correlation of exhaust emission levels and type of maintenance was possible. The exhaust emission levels of carbon monoxide (CO) and oxides of nitrogen (NOx) have been determined; total hydrocarbon (THC) levels are not quantified. The variability of the CO and NOx species is less than five percent, THC variability is almost 30 percent. The engine emissions did not meet the current or proposed federal standards. Ninety percent of the turbine engine exhaust emissions are produced at the idle power mode. The operational parameters for this important (from the stand-point of emission data collection) mode are vague and should be more defined. The type of fuel used for emission testing has a significant effect on the resultant exhaust emission levels. (Author)

AD-A092 383/9 PC **A02**/MF **A01**
National Aeronautics and Space Administration, Cleveland, OH. Lewis Research Center.
Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
Technical paper,
Peter L. Meitner, and Arthur J. Glassman. Nov 80, 16p NASA-E-455, NASA-TP-1708, AVRADCOM-TR-80-13

An off-design performance loss model was developed for variable-stator (pivoted vane), radial turbines through analytical modeling and experimental data analysis. Stator loss is determined by a viscious loss model; and stator vane end-clearance leakage effects are determined by a clearance-flow model. Rotor loss coefficients were obtained by analyzing the experimental data from a turbine rotor previously tested with six stators having throat areas from 20 to 144 percent of design area and were correlated with stator-to-rotor throat area ratio. An incidence loss model was selected to obtain best agreement with experimental results. Predicted turbine performance is compared with experimental results for the design rotor as well as with results for extended and cutback versions of the rotor. Sample calculations were made to show the effects of stator vane end-clearance leakage. (Author)

AD-B014 875/9 PC **A10**/MF **A01**
United Technologies Corp., Sunnyvale, CA. Chemical Systems Div.
Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
Final rept. Jul 74-Jan 76,
T. C. Warren. Oct 76, 213p NWC-TP-5835, GIDEP-E069-2686
Contract N00123-74-C-1357
Also available as Rept. no. GIDEP-805.30.20.70-X7-01.
Distribution limitation now removed.

This report discusses the design, analysis, fabrication, testing, and delivery of positive expulsion fuel tank assemblies for the generic ordnance ramjet engine (GORJE). The program was conducted in two phases: Phase I Task I encompassed the design and analysis of a tank assembly satisfying the basic GORJE requirements. This assembly consisted of a 4130 steel tank with a reinforced elastomeric positive expulsion bladder that contains the ramjet fuel and collapses around a central collector pipe that houses the fuel delivery gas generator and flow control valve. Phase I Task II involved the fabrication and test of one ground test tank with a spare collector pipe and six expulsion bladders. This ground test tank was delivered to NWC for testing purposes. Phase II involved the fabrication, checkout, and delivery of four flight test units to NWC for use in the GORJE flight test program. This program was concluded with a detailed manufacturing cost analysis of the tank assembly in quantities up to 2,000 units. (Author)

AD-B022 460/0 PC **A04**/MF **A01**
General Electric Co., West Lynn, MA. Aircraft Engine Group.
YJ101-YF-17 Aircraft Prototype Development Summary.
Final rept. Mar 72-Dec 75,
G. G. Lail, and J. H. Pennell. Jan 77, 56p R77AEG012, AFAPL-TR-77-18
Contract F33657-75-C-0010
Distribution limitation now removed.

In the time period from 1970 to early 1975, the Air Force funded development of the YJ101 prototype engine for use in Northrop, YF-17, Lightweight Fighter Prototype. The engine passed a Prototype Preliminary Flight Rating Test (PPFRT) in early 1974. Flight testing of the YF-17 with YJ101 engines was terminated in early 1975 after a total of 288 aircraft flights for a total of 691 engine flight hours and 2455 total engine test hours. At the completion of the YJ101 Prototype Development Program the USAF funded a one year Continuing Engineering Program. The purpose of this program was to organize and rationalize prototype engine development experience and data into sound technical programming and fiscal information and to investigate and fundamentals of engine development practices. This report summarizes the results of the earlier Prototype Development effort and the flight test program and discusses the results and conclusions of the Continuing Engineering Program. (Author)

PAT-APPL-6-171 611 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Flow-Closing Bleed Valve Assembly.
Patent Application,
G. F. Springman. Filed 23 Jul 80, 15p AD-D007 853/5
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This application discloses an adjustable, spring-loaded poppet valve assembly for use in combination with a turbofan engine having deteriorated clearances in the compressor section which result in difficulty in starting the engine. The assembly initially is biased in the open position; and, it permits starting of the engine by bleeding overboard (through an engine duct outlet) some of the fore-to-aft compressor airflow, until the engine starts. The assembly remains in the open position until the pressure of the air that it is bleeding is sufficient to overcome the force of the biasing spring; and, then the assembly is forced to the closed position by the pressure of that air. The assembly stays in the closed position, until the engine is shut-down (i.e. turned off). The pressure of the compressor air then falls, the compressor air flow eventually ends, and the compressed spring expands, with the assembly thereby returning to the open position.

PAT-APPL-6-185 473 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Improved Film Cooled Annular Combustor.
Patent Application,
Stephen J. Howell. Filed 9 Sep 80, 21p AD-D007 862/6
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This application discloses a structural improvement to, and a method of improving each cooling nuggest of an annular combustor of a gas turbofan engine, so that the lip portion of each nuggest does not buckle. The structural improvement comprises a plurality of passageways in the defining shell of the combustor, and an unsupported downstream extension of the original length of the prior art lip portion of each nugget to a location which is farther downstream than the most rearwardly (i.e., downstream) positioned passageway of the plurality. The method includes the steps of forming the plurality of passageways, and of extending the lip portion of each nugget downstream, and unsupported, to a position beyond the most rearwardly (i.e., downstream) passageway. The results of the use of the structural improvement, and of the practising of the steps of the improvement method, include: the the promotion of film cooling of the cooling nuggets and of the shell of the combustor; the prevention of buckling of the lip portion of each nugget; and the increase of the useable life span of the combustor.

PAT-APPL-6-187 646 PC **A02**/MF **A01**
Department of the Air Force, Washington, DC.
Fuel Valve.
Patent Application,
R. L. Williams. Filed 16 Sep 80, 16p AD-D007 863/4
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of application available NTIS.

This application discloses a valve assembly for controlling the flow of a liquid fuel. The assembly includes a spring-biased movable valve member made of tungsten carbide, a captured sleeve member also made of tungsten carbide, and a readily accessible filtering screen member disposed in the fuel duct inlet of the assembly. In assembled form, the housing comprises two releasably connected constituent portions which integrate to form a one-piece unit. The structure of the unit, and the extreme hardness of the tungsten carbide material of which the valve member and the sleeve member are made, prevent corrosion and/or galling (such as by sand particles) and/or other normally-expected wear of the valve assembly, and thereby result in continued accuracy and reliability of the valve assembly, while maintaining simplicity and compactness of it. A plurality of these valve assemblies can be effectively and economically used in combination with, and intermediate of, the fuel manifold and the fuel spraybars of the afterburner of a gas turbine engine, to keep the manifold full when not operating and to effectuate equal distribution of a given flow of fuel to all spraybars throughout the fuel flow range.

PATENT-4 228 753 Not available NTIS
Department of the Navy, Washington, DC.
Fluidic Controlled Diffusers for Turbopumps.
Patent,

Sydney Davis, and John M. Durkin. Filed 27 Feb 79, patented 21 Oct 80, 7p AD-D007 871/7, PAT-APPL-6-015 675
Supersedes PAT-APPL-6-015 675, AD-D007 179.
Availability: This Government-owned invention available for U.S. licensing and, possibly, for foreign licensing. Copy of patent available Commissioner of Patents, Washington, DC 20231 $0.50.

An arrangement controls the apparent curvature of diffuser vanes of a turbine fan to reduce stalling of the vanes and increase efficiency of the fan output over a wider range of flow demand. Sensors responsive to pressure on opposite sides of the vanes selectively control the discharge of pressurized fluid from the diffuser vanes to effect their apparent curvature changes. The arrangement has particular use in a ride control system for surface effect ships. (Author)

21G. Reciprocating Engines

SAND-79-8756 PC **A02**/MF **A01**
Sandia National Labs., Albuquerque, NM.
Influence of Air Motion Variation on the Performance of a Direct-Injection Stratified-Charge Engine.
P. O. Witze. Sep 80, 11p CONF-801127-1
Contract AC04-76DP00789
International conference on stratified charge automotive engines, London, UK, 25 Nov 1980.

Swirl rates and turbulence levels in an optically accessible research engine were varied by changing the orientation of the shrouded intake valve. The air motion within the cylinder was characterized using laser Doppler velocimetry. Measurements of the indicated mean effective pressure are reported as a function of the shroud orientation, equivalence ratio, and ignition timing. Laser shadowgraph photography was used to visualize the interaction of the fuel jet with the swirling flow and the ensuing combustion process. For the case of high-swirl/low turbulence, the flame is seen to remain attached to the spark plug, and its rapid propagation is convection dominated; for low-swirl/high-turbulence conditions, the flame is not attached, and propagation is mainly by turbulent diffusion. (ERA citation 06:001017)

21H. Rocket Motors and Engines

AD-A091 916/7 PC **A02**/MF **A01**
Royal Aircraft Establishment, Farnborough (England).
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
S. A. Thornton. Dec 79, 24p RAE-LIBRARY BIB-372, DRIC-BR-75866

No abstract available.

AD-A092 135/3 PC **A04**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Experimental Investigation of the Dual Chamber Rocket Motor.
Final rept.,
J. F. McFillin, Jr., S. T. Van Brocklin, J. E. Beakley, and D. W. Netzer. Jul 80, 56p Rept no. NPS67-80-006

An experimental investigation was conducted to further determine the operating characteristics of the dual chamber rocket motor. Axisymmetric and two-dimensional apparatuses were used with air flow to simulate the actual flow. Without special design considerations the sustainer exhaust was found to always shockdown within the booster cavity except for very short booster lengths. Thrust was found to be insensitive to booster cavity length. With nozzle throat area ratios and booster diameters sized properly supersonic flow could be maintained within the booster cavity. Practical designs for actual motors appear quite feasible, especially for a nozzleless booster. (Author)

AD-B018 629/6 PC **A04**/MF **A01**
Arnold Engineering Development Center, Arnold AFS, TN.
Qualification Test of the Thiokol TE-M-364-19 Solid-Propellant Rocket Motor (S/N 19006).
Final rept. for period ending 4 Feb 77,
H. L. Merryman. May 77, 62p Rept no. AEDC-TR-77-59
Prepared in cooperation with ARO, Inc., Tullahoma, Tenn., Rept. no. ARO-ETF-TR-7729.
Distribution limitation now removed.

One Thiokol Chemical Corporation TE-M-364-19 solid-propellant rocket motor was fired while spinning at 60 rpm about its axial centerline. The motor was ignited at a simulated altitude of 122,000 ft, following temperature conditioning at 15 + or - 5 F for a minimum of 44 hr. The program objectives of determining vacuum ballistic performance, altitude ignition characteristics, motor temperature-time history, the lateral (nonaxial) thrust vector, and structural integrity of the motor components are presented and discussed. (Author)

AD-B027 191/6 PC**$8.00***
Air Force Armament Lab., Eglin AFB, FL.
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
Final rept. Jul-Nov 76,
Jeffrey W. Griffin, Richard T. Schneider, and William J. Rothschild. Apr 77, 81p Rept no. AFATL-TR-77-50
Distribution limitation now removed.

This report contains temperature profile measurements of a small rocket engine burning RP-1 fuel. A standard line reversal technique with sodium as the emitting species was utilized. Apparent temperature maps of the engine plumes produced by oxygen-rich and fuel-rich mixture ratios in a stratochamber simulating altitude (pressure) conditions are also represented. Apparatus used for the measurements and calibration procedure are fully described in the report. (Author)

21I. Rocket Propellants

AD-A092 148/6 PC **A04**/MF **A01**
Space Sciences, Inc., Monrovia, CA.
A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
Final rept. 1 May 75-1 Aug 80,
Milton Farber, and R. D. Srivastava. 30 Sep 80, 74p
Contract N00014-75-C-0986

During the course of the contract chemical aspects of several propellants and explosives were investigated. Employing mass spectrometer species identification, combustion, decomposition kinetic and ignition experiments were performed to determine the mechanisms and reactions of several energetic materials. Four general categories of compounds were involved: (1) super rate and plateau burning propellants, (2) advanced gun propellant candidates, (3) the propellant and explosive compounds, 1,3,5-trinitrohexahydro-1,3,5-triazine (RDX), 1,3,5,7-tetranitro-1,3,5,7-tetraazacyclooctane (HMX), and 1,3,5-triamino-2,4,6-trinitrobenzene (TATB), and (4) a new series of high nitrogen binder materials. (Author)

AD-A092 423/3 PC **A06**/MF **A01**
Naval Postgraduate School, Monterey, CA.
An Experimental Study of Solid Propellant Deflagration Using High Speed Motion Pictures and Postfire Residue Analysis.
Master's thesis,
Vincent Daniel DiLoreto. Jun 80, 121p

Six aluminized propellants were investigated through strand burning in a windowed combustion bomb at 500 psi and 1000 psi. Postfire particle residues were analyzed with a scanning electron microscope and found to have bi-modal size distributions. The mean diameter of the fine particle distribution was approximately 10 microns in all cases while the mean diameter of the coarse particles was approximately the same size as the initial aluminum cast in the propellant. Measurements taken from the high speed motion pictures included resolution, propellant burning rate, the diameter of the burning particles ejected from the surface, and vertical burning particles. The diameters of burning particles were approximately 7 to 12 times the diameter of the initial aluminum cast in the propellant. Aluminum size had only small effects on burning rate. The smallest particle that could be accurately resolved with the motion pictures was approximately 60 microns. (Author)

22.

SPACE TECHNOLOGY

22B. Spacecraft

AD-A091 953/0 PC **A04**/MF **A01**
Science Applications, Inc., El Segundo, CA.
Spacecraft Charging Standard Report.
Interim rept.,
Alan B. Holman. 30 Sep 80, 74p
Contract F04701-80-C-0009

This report provides an interim version of a Spacecraft Charging Requirements Appendix to MIL-STD-1541. Several key issues remain unresolved at this time. It is extremely difficult to refine this MIL-STD-1541 revision so that it pleases or is at least acceptable to everyone. SAI has drawn upon a large base of information in developing the MIL-STD-1541 appendix for S/C Charging and SAI has a centralized view of what is needed by the community. This view is inclusive of the interests of SPO/Aerospace, space vehicle contractors and supporting agencies. The technical issues must be resolved among this community and not be biased towards any group. Of prime importance is to ascertain the manner in which the 'worst case' specifications for the environment, charging, and discharging should be presented, and how to properly incorporate the analysis and test requirements.

AD-A092 446/4 PC **A03**/MF **A01**
Boston Coll., Chestnut Hill, MA. Space Data Analysis Lab.
Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
Environmental research papers,
J. M. Forbes, and H. B. Garrett. 16 Jun 80, 34p
AFGL-TR-80-0185, AFGL-ERP-706
Contract F19628-79-C-0031
Availability: Microfiche copies only.

Satellites in geosynchronous orbit have been found to vary rapidly in potential as they pass into the earth's shadow. The cause of this effect is known to be the loss of the photoelectron flux from the satellite surface. A material-dependent model of this emission process based on detailed models of the attenuation of the sunlight and the photoelectron emission as a function of wavelength will be presented. The model is found to agree in detail with actual measurements of photoelectron emission from tungsten. The computer code included in the Appendix is readily adaptable to a number of materials and situations where the detailed absorption of sunlight as a function of altitude is required. (Author)

AD-A092 447/2 PC **A03**/MF **A01**
Air Force Geophysics Lab., Hanscom AFB, MA.
Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
Air Force surveys in geophysics,
James T. Bunting, and Chankey N. Touart. 26 Jun 80, 30p Rept nos. AFGL-TR-80-0209, AFGL-AFSG-428

A weather erosion parameter known as the Environmental Severity Index (ESI) has been estimated

using infrared and visible data from satellites. Cloud sampling requirements limited the original prediction equations to satellite data averaged over a horizontal scale of 70 km. Further experiments have demonstrated great utility for satellite estimates on a scale of 10 km and also revealed some systematic differences between the coarse and the fine scale estimates. The ESI averages 1 percent to 10 percent higher for the fine scale estimates and high values of ESI are observed more frequently. (Author)

AD-A092 458/9 PC **A02**/MF **A01**
Aerospace Corp., El Segundo, CA.
Cost Estimating Procedure for Unmanned Satellites.
Final rept.,
H. Greer, and H. G. Campbell. Nov 80, 19p Rept no. TR-0081(6910)-1
Contract F04701-80-C-0081

Historical costs from 11 unmanned satellite programs were analyzed. From these data, total satellite cost estimating relationships (CERs) were developed for use during preliminary design studies. A time-related factor, which it is believed accounts for differences in technology, was observed in the data. Stratification of the data by type of payload was also found to be necessary. Cost differences that stem from production quantity variations were accounted for by adjustment factors developed from standard learning curve theory. An example to illustrate use of the CERs is provided. (Author)

AD-891 461/6 PC **A07**/MF **A01**
Philips Labs., Briarcliff Manor, NY.
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part I. Thermodynamic Design and Study of Life-Limiting Components.
Interim technical rept. no. 1, 15 Sep 70-30 Sep 71,
Gerald K. Pitcher. Dec 71, 128p PL-40-CR71-1230, AFFDL-TR-71-147-Pt-1
Contract F33615-71-C-1024
Distribution limitation now removed.

A preliminary thermodynamic configuration has been established for a Vuilleumier (VM) cycle cryogenic refrigerator suitable for space flight and designed for long unattended life and high efficiency. To achieve an operational life of 20,000 hours, four major design areas were investigated, viz., mechanical drive, regenerator seals, electric hot side heater, and working gas contamination. The refrigerator will be a triple-expansion unit; it will utilize an oil-lubricated rhombic drive, rolling diaphragm reciprocating shaft seals, and a dual-element heater for the hot side. Concepts were evolved for the design of the life-limiting components, and preliminary tests are being conducted on the mechanical drive and regenerator seals. An initial design, including weight, power input and reliability, is described.

22D. Spacecraft Launch Vehicles and Ground Support

AD-913 898/3 PC **A09**/MF **A01**
Stanford Research Inst., Menlo Park, CA.
Titan Vehicle Electrostatic Environment.
Final rept. Feb 70-Dec 72,
Joseph E. Nanevicz, and G. Richard Hilbers. Jul 73, 177p AFAL-TR-73-170
Contract F33615-70-C-1406
Distribution limitation now removed.

Ground and flight instrumentation was developed and employed for the study of vehicle electrification during the launch of two Titan IIIC rockets. The flight instrumentation operated and gathered data from ignition to payload orbit injection at 19,400 nmi. The first launch occurred under clear-weather conditions and provided data on rocket-motor electrification at liftoff and in the ionosphere. On the second laucnh, clouds existed in the launch area so that this flight provided data on vehicle electrification during flight through precipitation. The results of the experiment indicate that rockets become electrified by the action of the engines at liftoff, and that precipitation-particle impact also produces electrification. Streamer discharges were measured resulting from precipitation-static electrification of a dielectric surface on the front of the rocket. Results from the atmospheric portion of the flight indicate that the electrostatic behavior of a large rocket is similar to that of a jet aircraft. In the flight through the ionosphere, it was found that operation of the main engines and altitude-control rockets produced readily detected signals in the electrostatic sensors. This indicated that rocket-exhaust constituents were being returned to the vicinity of the vehicle. Data from the ground instrumentation indicate that the electrostatic fields in the vicinity of the pad at launch are dominated by charges on the clouds generated by the launch. Instrumentation and the results of the tests are discussed in considerable detail. Where appropriate, results are compared to theoretical analyses or to earlier measurements on aircraft and rockets. (Author)

KEYWORD INDEX

NTIS®

Index entries in this section are selected to indicate important ideas and concepts presented in a report. When using the keyword index, be sure to look under terms narrower, broader, or related to a particular topic. Although some of the keywords are not selected from a controlled vocabulary of terms, most of them have been selected from the DoD, DoE, NASA, or NTIS controlled vocabularies. The entries are arranged by keyword and then by the NTIS order number.

SAMPLE ENTRY

FAST FOURIER TRANSFORMATIONS
Computation of Hankel Transforms Using the Fast-Fourier Transform Algorithm.
PB80-104045 33

Keyword term
Title
NTIS order number Page number

30-MM PROJECTILES
Yaw Card Range Tests of a 30mm Target Projectile.
AD-B014 108/5 1432

ABANDONED WELLS
Investigation and Evaluation of Geopressured-Geothermal Wells.
DOE/ET/28460-5 1345

ABATEMENT
Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
PB81-139370 1374

Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F),
PB81-139388 1374

ABSORBERS (MATERIALS)
Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396

ABSORPTION
Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

ABSORPTION SPECTRA
Reprint: On the Jahn-Teller Effect in ReF6.
AD-A092 334/2 1334

Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
AD-A092 419/1 1334

ACADEMIC LIBRARIES
An Instructional Module on Library Research,
ED-183 153 1298

ACCELERATOR FACILITIES
Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(Rev.1) 1441

ACCELEROMETERS
Accelerometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851495 1397

Accelerometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851503 1397

Accelerometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851511 1398

Accelerometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851529 1398

ACCIDENT INVESTIGATIONS
The Investigation of Grain Elevator Explosions.
PB81-123549 1291

ACCLIMATIZATION
Sex Differences in Acclimation to a Hot-Dry Environment.
AD-A092 360/7 1327

ACCOUNTING
Correct Balance of Defense's Foreign Military Sales Trust Fund Unknown.
AD-A091 894/6 1296

Cost Impact Assessment of Cost Accounting Practice Changes.
AD-A092 434/0 1296

Analyzing Allowance Program Administrative Costs: Account Structures and Methodology,
PB81-139412 1314

ACCUMULATORS
Kilowatt Isotope Power System: Component Report for the Ground Demonstration System Accumulator.
DOE/ET/33001-T2 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Accumulator. 77-KIPS-100.
DOE/ET/33001-T30 1431

ACETYLCYSTEINE
N-Acetyl-Cysteine Protects Against Cardiac Damage from Subsequently-Administered Cardio-Toxic Anthracycline in Cancer Therapy.
PAT-APPL-6-190 064 1326

ACETYLENE
Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
DOE/ER/04445-T1 1336

ACID TREATMENT
Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate CaHPO4.2H2O Formation,
PB81-126088 1320

ACNE
Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 594 1325

ACOUSTIC ARRAYS
Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406

Implementation of the Phase Difference Trace Function for a Circular Array.
AD-A092 195/7 1407

Long Range Listening System.
PATENT-4 223 311 1410

ACOUSTIC DELAY LINES
Broadband
Low Loss Wideband Acoustic Delay Line.
AD-923 650/6 1352

ACOUSTIC DETECTORS
Warning systems
Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437

ACOUSTIC REFLECTION
Reprint: A Technique for the Evaluation of Circularly Symmetric Two-Dimensional Fourier Transforms and Its Application to the Measurement of Ocean Bottom Reflection Coefficients.
AD-A091 879/7 1436

Reprint: A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom.
AD-A091 880/5 1436

ACOUSTIC SIGNALS
Surface Acoustic Signal Defader.
PATENT-4 219 888 1437

ACOUSTIC TRACKING
An Application of Kalman Filtering to Torpedo Tracking.
AD-A092 303/7 1407

ACOUSTIC VELOCITY
Reprint: Seafloor and Near-Surface Sound Velocities from Barents Sea Sonobuoy Data.

KEYWORD INDEX

AD-A091 966/2 1436

ACOUSTIC WAVES
Propagation, Scattering, and Reflection of Waves in Continuous and Random Inhomogeneous Media, and Nonlinear Boundary Value Problems.
AD-A092 062/9 1436

ACOUSTICS
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

ACTINIDES
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332

ACTIVATION
Carbon Dioxide Activation; Formation of trans-(Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

ACTIVATION ENERGY
On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334

ADAPTATION
Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

ADAPTERS
Connector-to-Connector Adaptor.
PATENT-4 218 110 1352

ADAPTIVE FILTERS
Design and Implementation of Multi-Input Adaptive Signal Extractions.
AD-A092 265/8 1355

ADAPTIVE SYSTEMS
Adaptive Antenna Control (AAC) Program.
AD-A092 030/6 1407

ADDITIVES
Taggants with Explosive Induced Magnetic Susceptibility.
PAT-APPL-6-181 924 1433

Reprint: Migration Models for Polymer Additives,
PB81-126146 1323

ADDRESSING
Dynamic Linking in a Microcomputer Environment.
AD-A092 404/3 1356

ADHESIVES
Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1367

Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367

Polyethylene Adhesives. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855322 1367

ADVISORY ACTIVITIES
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394

AERIAL DELIVERY
Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403

AERIAL PHOTOGRAPHY
Reduction
Redundant Area Coding Study.
AD-888 625/1 1358

AERODYNAMIC CONTROL SURFACES
Aerodynamic loading
Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
AD-894 188/2 1438

AERODYNAMICS
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456

USAF Test Pilot School. Flight Test Handbook. Performance. Theory and Flight Techniques. Chapters 1 through 9.
AD-A091 990/2 1303

AERONAUTICS
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394

A Feasibility Study for Advanced Technology Integration for General Aviation.
AD-A092 437/3 1289

AEROSOLS
Satellite Measurements of Atmospheric Aerosols.
AD-A092 152/8 1293

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383

Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

AEROSPACE MEDICINE
Annotated Bibliography of Reports. Supplement Number 11, 1 October 1978 - 30 September 1979.
AD-A092 160/1 1318

AGGLUTINATION
Reprint: Lack of Diagnostic Utility of Febrile Agglutinin Screens.
AD-A092 085/0 1318

AGGLUTININS
Reprint: Lack of Diagnostic Utility of Febrile Agglutinin Screens.
AD-A092 085/0 1318

AGGREGATES
Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388

AGLYCONES
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338

AGREEMENTS
Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
PB81-133365 1307

AGRICULTURAL ECONOMICS
Structure and Adjustments of the Farming Sector: A Data Base by Regions.
PB81-137705 1291

AIR
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T7 1345

AIR BREATHING ENGINES
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
AD-A092 229/4 1454

AIR CLEANING
Index to the AEC/ERDA/DOE Air Cleaning Conferences.
CONF-801038-3 1426

AIR COMPRESSORS
Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855413 1390

AIR FILTERS
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383

AIR FORCE FACILITIES
Williams Air Force Base Air Quality Monitoring Study,
AD-A092 165/0 1381

AIR FORCE PROCUREMENT
Program Planning and Appraisal Methodology.
AD-B027 872/1 1297

AIR HEATERS
MHD Air Heater Development Technology. Progress Report, November 26, 1979-March 31, 1980.
DOE/ET/15602-T1 1364

AIR INFILTRATION
Air Infiltration in Buildings: International Energy Agency (IEA). Draft Program Plan.
DOE/CS-0099-D 1379

AIR POLLUTION
Production of Nitrous Oxide in a Rocket Motor Exhaust.
AD-A091 893/8 1380

Williams Air Force Base Air Quality Monitoring Study,
AD-A092 165/0 1381

Exhaust Emission Characteristics and Variability for Maintained General Electric CF6-50 Turbofan Engines.
AD-A092 291/4 1455

Analysis of Baseline Data from Federally Leased Oil Shale Tracts in Colorado and Utah.
DOE/EV/70031-5 1383

Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383

Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383

Polynuclear Aromatic Compounds. Synthesis and Purification.
PB81-125015 1332

Region V's Guidance for Developing a State Malfunction Notification and Correction Program,
PB81-125601 1384

AIR POLLUTION CONTROL
Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383

AIR POLLUTION CONTROL EQUIPMENT
Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338

Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
PB81-122723 1384

AIR POLLUTION DETECTION
Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope),
PB81-125171 1338

Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
PB81-125189 1338

AIR POLLUTION EFFECTS (HUMANS)
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

AIR POLLUTION MONITORS
Radian Remote Sampling System. Digital Processor System.
COO-4596-T1 1357

Mobile Ambient Air Monitor.
RFP-3010 1398

AIR POLLUTION SAMPLING
Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383

AIR QUALITY
Williams Air Force Base Air Quality Monitoring Study,
AD-A092 165/0 1381

AIR QUALITY DATA
Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383

AIR RESCUES
Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323

AIR TO AIR
Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323

AIR TO AIR MISSILES
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

AIR TO SURFACE
Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403

AIR TO SURFACE MISSILES
Television guidance
'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411

AIR TRAFFIC CONTROLLERS
Ground Controlled Approach Controller Training System (GCA-CTS) Student Guide.
AD-A091 930/8 1303

AIRCRAFT
Census of U.S. Civil Aircraft, Calendar Year 1978.
AD-A092 414/2 1288

In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295

AIRCRAFT AMMUNITION
Yaw Card Range Tests of a 30mm Frangible TP Projectile.
AD-B013 355/3 1432

AIRCRAFT ANTENNAS
Airborne Antenna Pattern Code User's Manual.
AD-A092 316/9 1359

AIRCRAFT CABINS
Summary of Aviation Safety Program Resumes. Cabin Safety.
AD-A091 936/1 1288

AIRCRAFT CARRIERS
Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16,
AD-A092 392/0 1392

AIRCRAFT CONFIGURATIONS
Airborne Antenna Pattern Code User's Manual.
AD-A092 316/9 1359

AIRCRAFT ENGINES
Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978.
AD-A092 043/9 1454

AIRCRAFT EQUIPMENT
Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938.
AD-A091 915/9 1288

AIRCRAFT FIRE CONTROL SYSTEMS
Targeting
INTERAND Target Annotation System.
AD-B001 109/8 1435

AIRCRAFT FIRES
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394

AIRCRAFT GUNS
Ammunition feed mechanisms
GFU-6/E 30mm Ammunition Loader for GAU-8A Gun System.
AD-B010 100/6 1432

AIRCRAFT MAINTENANCE
Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304

Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16.
AD-A092 392/0 1392

AIRCRAFT NOISE
A Guidance Document on Airport Noise Control.
AD-A092 228/6 1290

The Need for Airport Noise Monitoring Systems. Their Uses, and Value in Promoting Civil Aviation.
AD-A092 240/1 1290

AIRFOILS
Transonic flow
Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289

AIRFRAMES
Damage assessment
Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436

Design
Design Manual for Vertical Gusts Based on Power Spectral Techniques.
AD-879 736/7 1289

AIRPORT RADAR SYSTEMS
Reprint: Long-Term Measurements in C2n in the Boundary Layer.
AD-A092 427/4 1295

Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295

AIRPORTS
Airport Ground Access Planning Guide.
AD-A092 018/1 1290

Williams Air Force Base Air Quality Monitoring Study.
AD-A092 165/0 1381

Task Force Delay Study. William B. Hartsfield Atlanta International Airport. Volume II.
AD-A092 455/5 1290

Task Force Delay Study. Denver Stapleton International Airport, Volume II.
AD-A092 456/3 1291

AIRY FUNCTION
Reprint: The Second Painleve Transcendent: A Nonlinear Airy Function.
AD-A092 052/0 1375

ALABAMA
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Tupelo Quadrangle, Mississippi, Alabama, and Tennessee. Final Report.
GJBX-203(80) 1346

ALASKA
Annual Report, 1979.
DOE/TIC-11212 1362

ALBEDO
New Observations on the Daily Variations of Natural Ice Albedo.
PB81-132789 1350

ALCOHOLISM
Reprint: Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance.
AD-A092 048/8 1308

Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator)--Translation.
PB81-125650 1309

ALGORITHMS
Detailed Modelling of Combustion Systems.
AD-A092 234/4 1452

Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403

ALKANES
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332

ALKENES
Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 162/7 1333

Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335

Catalytic Conversion of Oxygenated Compounds to Low Molecular Weight Olefins. Progress Report for the Period March 1, 1980 to August 31, 1980.
DOE/PC/04717-5 1331

ALL VOLUNTEER
Personnel Management in the All-Volunteer Force Study.
AD-A092 108/0 1304

ALLOYS
Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.
DOE/ET/10460-14 1370

ALLUVIUM
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 2[illegible]/0 1342

ALPHA DECAY RADIOISOTOPES
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

ALPHA SPECTRA
As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429

ALTERNATORS
Design Study for a 100-Watt Turboalternator Power Unit.
AD-B029 195/5 1364

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Alternator Stator.
DOE/ET/33001-T3 1431

Dynamic Isotope Power System: Technology Verification Phase. Component Test Specification for the Ground Demonstration System Alternator Stator. 79-DIPS-41.
DOE/ET/33001-T26 1431

ALUMINA LIME SODA PROCESS
Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385

ALUMINIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371

Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391

ALUMINIUM ALLOYS
Moessbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371

ALUMINIUM OXIDES
Observation of Dislocations and Twins in Explosively Compacted Alumina.
CONF-800641-7 1367

Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367

ALUMINIZED PROPELLANTS
An Experimental Study of Solid Propellant Deflagration Using High Speed Motion Pictures and Postfire Residue Analysis.
AD-A092 423/3 1456

ALUMINUM
Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391

Anodizing Aluminum. January, 1969-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855389 1391

ALUMINUM ALLOYS
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
AD-A091 945/6 1369

Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
AD-A092 186/6 1369

Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys.
PB81-121865 1372

Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391

ALUMINUM CHLORINE BATTERIES
Advanced Aluminum-Chlorine Battery for Expendable ECM Devices.
AD-B004 957/7 1366

ALUMINUM COMPOUNDS
Interdiffusion of Metals and Semiconductors.
AD-A091 961/3 1450

ALUMINUM OXIDE
Reprint: Plastic Deformation of Fine-Grained Alumina (Al_2O_3): II, Basal Slip and Nonaccommodated Grain-Boundary Sliding.
PB81-121543 1368

AMBIENT NOISE
Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411

AMBULATORY OF HEALTH CARE
Determinants and Effects of Organizational Strategies of Control Directed at Quality of Care in Organized Ambulatory Care Settings.
PB81-133613 1322

AMERICAN INDIANS
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
PB81-125619 1303

AMERICIUM FLUORIDES
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

AMIDES
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332

AMINES
Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite.
PB81-126211 1339

AMMUNITION
A Methodology for Predicting Ammunition Requirements as a Function of Force Size.
AD-B013 302/5 1432

AMMUNITION FEED MECHANISMS
Aircraft ammunition
GFU-6/E 30mm Ammunition Loader for GAU-8A Gun System.
AD-B010 100/6 1432

AMOEBA
Study of Pathogenic Free-Living Amebas in Fresh-Water Lakes in Virginia.
PB81-126450 1322

AMPHIBIOUS SHIPS
Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16.
AD-A092 392/0 1392

AMPLITUDE MODULATION
Reprint: Threshold Effect on Error Probability in QAM Systems.
AD-A092 122/1 1408

AN/TRS-2
Independent Evaluation Report for Platoon Early Warning System (PEWS-IER) AN/TRS-2( ).
AD-B023 039/1 1400

ANALGESICS
Reprint: Opiate-Like Effects of Electroconvulsive Shock in Rats: A Differential Effect of Naloxone on Nociceptive Measures.
AD-A092 341/7 1325

ANALOG TO DIGITAL CONVERTERS
Ways for Providing a High-Speed Analog-to-Digital Converter with Wide Dynamic Range--Translation.
AD-A092 099/1 1359

High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361

Offset Correction Apparatus for a Successive Approximation A/D Converter.
PATENT-4 228 423 1361

KEYWORD INDEX

ANALYSIS OF VARIANCE
Infrared Measurement Variability Analysis.
AD-A092 068/6 1411

ANALYTICAL CHEMISTRY
Analytical Chemistry of 2,4,6-Trinitrotoluene.
AD-A092 348/2 1432

ANALYTICAL PHOTOGRAMMETRY
Applied Research in Analytical Photogrammetry.
PB81-127300 1341

ANECHOIC CHAMBERS
Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396

ANESTHETICS
Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325

ANGULAR TRANSDUCERS
A New Angular Displacement Transducer.
AD-C019 184/1 1396

ANIMAL ECOLOGY
Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant,
PB81-130049 1322

ANIMAL GROWTH
Annual Progress Report, July 1, 1979-June 30, 1980.
UCLA-12-1253 1322

ANIMAL MIGRATIONS
Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay,
PB81-131765 1317

ANIMAL POPULATIONS
Reprint: Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
PB81-120768 1317

ANIONS
Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
AD-A092 497/7 1335

ANNOTATED BIBLIOGRAPHIES
Materials from the National Arts and the Handicapped Information Service: Annotated Bibliography. Second Draft.
ED-183 158 1298

Reference Materials in Criminal Justice: A Selective, Annotated Bibliography,
ED-183 166 1298

ANNULAR BURNERS
Improved Film Cooled Annular Combustor.
PAT-APPL-6-185 473 1455

ANODIZING
Anodizing Aluminum. January, 1969-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855389 1391

ANOMALIES
Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

ANTENNA ARRAYS
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359

ANTENNA RADIATION PATTERNS
Airborne Antenna Pattern Code User's Manual.
AD-A092 316/9 1359

ANTENNAS
Adaptive Antenna Control (AAC) Program.
AD-A092 030/6 1407

ANTHRACOSISILICOSIS
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

ANTIBIOTICS
Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329

ANTIBODIES
Reprint: Immune Reactivities of Antibodies against Glycolipids.
AD-A092 002/5 1317

ANTIFERROMAGNETIC MATERIALS
Relaxation Rates of Electronic and Nuclear Magnons in Antiferromagnetic Materials.
INIS-mf-5643 1451

ANTIFOULING
Non-Fouling Print Stylus.
PATENT-4 206 466 1399

ANTIINTRUSION DEVICES
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411

ANTIMISSILE DEFENSE SYSTEMS
Guidance and Control of Anti-Tactical Ballistic Missiles.
AD-A092 015/7 1400

Reflexive Launch Strategies.
AD-A092 300/3 1400

ANTIMONY
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

ANTIMONY 129
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

ANTIMONY 130
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

ANTIMONY 132
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

ANTINEOPLASTIC AGENTS
Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325

ANTINEOPLASTIC DRUGS
Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326

ANTISUBMARINE DEFENSE SYSTEMS
An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
AD-A092 405/0 1399

ANTISUBMARINE WARFARE
An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
AD-A092 405/0 1399

ANTITANK GUNS
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436

ANTITANK WEAPONS
An HP-67 Combat Model.
AD-A091 992/8 1402

ANTIVIRAL AGENTS
Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
AD-A092 285/6 1325

APPENDAGES
An Investigation of Appendage Drag,
AD-A092 353/2 1392

APPROXIMATION (MATHEMATICS)
Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354

AQUACULTURE
Reprint: Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
PB81-120685 1340

Reprint: Implications of Transplantations to Aquaculture and Ecosystems,
PB81-120743 1316

ARAGONITE
Reprint: Aragonite from Deep Sea Ultramafic Rocks.
AD-A091 967/0 1342

ARBITRATION
A Six State Study of Impasse Procedures in the Public Sector.
PB81-130718 1307

ARCH DAMS
Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
PB81-124000 1384

ARCHAEOLOGICAL SPECIMENS
Note on the Differential Thermal Analysis of Amazonian Archeological Pottery.
CBPF-A0009/79 1302

ARCTIC REGIONS
Concepts for Data Collection in the Arctic.
AD-A092 476/1 1349

AREA SECURITY
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411

ARGAS TICKS
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316

Reprint: The Subgenius Persicargas (Ixodoidea; Argasidae; Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
AD-A092 462/1 1316

ARGILLITE
Assessment of Potential Radionuclide Transport in Site-Specific Geologic Formations.
SAND-79-2468 1425

ARGON 40 REACTIONS
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

ARGUS TICKS
Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327

ARKANSAS
Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
DOE/CS/20160-01(V.5) 1362

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Memphis Quadrangle, Arkansas, Missouri, and Tennessee. Final Report.
GJBX-178(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Fort Smith Quadrangle, Oklahoma, and Arkansas. Final Report.
GJBX-200(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Russellville Quadrangle, Arkansas.
GJBX-204(80) 1347

ARKANSAS-2 REACTOR
Technical Evaluation of the Proposed Technical Specification Change for the Arkansas Nuclear Power Station, Unit 2.
UCID-18676 1422

ARMOR PIERCING AMMUNITION
A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
AD-B015 193/6 1433

ARMORED VEHICLES
Tank Wars General Information Manual.
AD-A092 350/8 1434

ARMS CONTROL
Defense Planning and Arms Control. Proceedings of a Special NSAI Conference, 12-14 June 1980, National Defense University, Washington, DC.
AD-A092 168/4 1400

ARMY AVIATION
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305

ARMY OPERATIONS
1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349

Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

Ryukyu Islands
Lessons Learned, Headquarters, Fort Buckner.
AD-845 654/3 1403

Southeast asia
Lessons Learned, Headquarters, United States Army, Pacific.
AD-858 945/9 1404

Vietnam
Lessons Learned, Headquarters, 63D Signal Battalion.
AD-845 655/0 1403

Lessons Learned, 4-68. Communications and Electronics Lessons Learned.
AD-855 117/8 1403

Lessons Learned, Headquarters, 93rd Engineer Battalion.
AD-855 273/9 1403

Lessons Learned, Headquarters, 36th Engineer Battalion.
AD-855 322/4 1403

Lessons Learned, Headquarters, 164th Aviation Group.
AD-855 356/2 1403

Lessons Learned, Headquarters, 299th Engineer Battalion.
AD-855 547/6 1403

Lessons Learned, Headquarters, 169th Engineer Battalion.
AD-855 561/7 1403

Lessons Learned, Headquarters, 3D Battalion,506th Infantry.
AD-855 651/6 1403

Lessons Learned, Headquarters, I Corps Tactical Zone Signal Group.
AD-855 695/3 1403

Lessons Learned, Headquarters, 84th Engineer Battalion.
AD-855 900/7 1403

Lessons Learned, Headquarters, 588th Engineer Battalion.
AD-855 901/5 1403

Lessons Learned, Headquarters, 31st Engineer Battalion.

AD-856 079/9 1403
Lessons Learned, Headquarters, 20th Engineer Battalion.
AD-856 118/5 1404
Lessons Learned, Headquarters, 577th Engineer Battalion.
AD-856 164/9 1404
Lessons Learned, Headquarters, 116th Engineer Battalion.
AD-856 367/8 1404
Lessons Learned, Headquarters, 46th Engineer Battalion.
AD-856 713/3 1404
Lessons Learned, Headquarters, 34th General Support Group.
AD-856 914/7 1404
Lessons Learned, Headquarters, 92nd Engineer Battalion.
AD-857 032/7 1404
Lessons Learned, Headquarters, 165th Aviation Group.
AD-857 128/3 1404
Lessons Learned, Headquarters, 160th Signal Group.
AD-857 482/4 1404
Lessons Learned, Headquarters, 815th Engineer Battalion (Construction).
AD-857 603/5 1404
Lessons Learned, Headquarters, 64th Quartermaster Battalion.
AD-858 376/7 1404
Lessons Learned, Headquarters, 394th Transportation Battalion.
AD-858 543/2 1404
Lessons Learned, Headquarters, 972d Signal Battalion.
AD-858 938/4 1404
Lessons Learned, Headquarters, U. S. Army Depot Long Binh.
AD-858 944/2 1404
Lessons Learned, Headquarters, 184th Ordnance Battalion (Ammo).
AD-859 175/2 1404
Lessons Learned, Headquarters, 125th Transportation Command.
AD-859 256/0 1404
Lessons Learned, Headquarters, 70th Engineer Battalion.
AD-859 267/7 1404
Lessons Learned, Headquarters, 2d Logistical Command.
AD-859 278/4 1404
Lessons Learned, Headquarters 4th Transportation Command.
AD-859 308/9 1404
Lessons Learned, Headquarters, 809th Engineer Battalion (Construction).
AD-859 333/7 1404
Lessons Learned, Headquarters, Army Depot, Cam Ranh.
AD-859 337/8 1404
Lessons Learned, Headquarters, 79th Engineer Group, (Construction).
AD-859 379/0 1404
Lessons Learned, Headquarters, 24th Transportation Battalion (Terminal).
AD-859 381/6 1404
Lessons Learned, Headquarters, 14th Transportation Battalion.
AD-859 526/6 1404
Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
AD-859 530/8 1404
Lessons Learned, Headquarters, U. S. Army Depot, Qui Nhon.
AD-859 531/6 1404
Lessons Learned, Headquarters, 124th Transportation Command (Terminal A).
AD-859 596/9 1405
Lessons Learned, Headquarters, 35th Engineer Group (Construction).
AD-859 837/7 1405
Lessons Learned, Headquarters 44th Engineer Group (Construction).
AD-859 902/9 1405
Lessons Learned, Headquarters 507th Transportation Group (Movement Control).
AD-859 903/7 1405
Lessons Learned, Headquarters, 538th Engineer Battalion.
AD-859 909/4 1405
Lessons Learned, Headquarters, 864th Engineer Battalion (Construction).
AD-859 926/8 1405
Lessons Learned, Headquarters, U. S. Army Headquarters Area Command.
AD-859 944/1 1405
Lessons Learned, Headquarters, Da Nang Signal Battalion.
AD-860 083/5 1405
Lessons Learned, Headquarters, 9th Logistical Command.
AD-860 216/1 1405
Lessons Learned, Headquarters, 44th Medical Brigade.
AD-860 217/9 1405
Lessons Learned, Headquarters, 63rd Signal Battalion (Army).
AD-860 218/7 1405
Lessons Learned, Headquarters, 20th Engineer Battalion.
AD-860 344/1 1405
Lessons Learned, Headquarters, 31st Engineer Battalion.
AD-860 345/8 1405
Lessons Learned, Headquarters, 34th Engineer Battalion.
AD-860 346/6 1405
Lessons Learned, Headquarters, 35th Engineer Battalion.
AD-860 347/4 1405
Lessons Learned, Headquarters, USASTRATCOM Facility Nha Trang.
AD-860 348/2 1303
Lessons Learned, Headquarters, 68th Medical Group.
AD-860 461/3 1405
Lessons Learned, Headquarters, 84th Engineer Battalion.
AD-860 632/9 1405
Lessons Learned, Headquarters, 41st Signal Battalion.
AD-860 676/2 1405
Lessons Learned, Headquarters, Phu Lam Signal Battalion.
AD-860 742/6 1405
Lessons Learned, Headquarters, 165th Aviation Group.
AD-861 029/7 1405
Lessons Learned, Headquarters, 62d Engineer Battalion.
AD-861 030/5 1405
Lessons Learned, Headquarters, 34th Engineer Group.
AD-861 031/3 1405
Lessons Learned, Headquarters, 43d Signal Battalion.
AD-861 032/1 1405
Lessons Learned, Headquarters, 36th Signal Battalion.
AD-861 033/9 1405
Lessons Learned, Headquarters, 52d Signal Battalion.
AD-861 474/5 1405
Lessons Learned, Headquarters, 3d Surgical Hospital.
AD-861 493/5 1405
Lessons Learned, Headquarters, 3d Field Hospital.
AD-861 494/3 1406
Lessons Learned, Headquarters, US Army Regional Communications Group (Vietnam).
AD-861 495/0 1406
Lessons Learned, Headquarters, 1st Signal Brigade (USASTRATCOM).
AD-861 496/8 1406
Lessons Learned, Headquarters, 45th Surgical Hospital.
AD-861 505/6 1406
Lessons Learned, Headquarters, 29th Evacuation Hospital.
AD-861 512/2 1406
Lessons Learned, Headquarters, 29th Signal Group.
AD-861 521/3 1406
Lessons Learned. Headquarters, 19th Engineer Battalion (Combat).
AD-861 529/6 1406
Lessons Learned. Headquarters, 27th Engineer Battalion (Combat).
AD-861 530/4 1406
Lessons Learned. Headquarters, 12th Signal Group.
AD-861 531/2 1406
Lessons Learned. Headquarters, 2nd Civil Affairs Company.
AD-861 532/0 1406
Lessons Learned. Headquarters, US Army STRATCOM Long Lines Battalion North.
AD-861 538/7 1406
Lessons Learned, Headquarters, 40th Signal Battalion (Construction).
AD-861 633/6 1406
Lessons Learned, Headquarters, 70th Engineer Battalion.
AD-861 634/4 1406
Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
AD-861 636/9 1406
Lessons Learned, Headquarters, 169th Engineer Battalion.
AD-861 670/8 1406
Lessons Learned, Headquarters, 86th Engineer Battalion.
AD-861 777/1 1406
Lessons Learned, Headquarters, 538th Engineer Battalion.
AD-861 827/4 1406
Lessons Learned, Headquarters, 519th Transportation Battalion.
AD-861 828/2 1406
Lessons Learned, Headquarters, 29th Civil Affairs Company.
AD-861 834/0 1406
Lessons Learned, Headquarters, 41st Civil Affairs Company.
AD-861 915/7 1406

Western europe

Lessons Learned Review of the HQ USEUCOM Command Center Project.
AD-856 745/5 1404

ARMY PERSONNEL

Evaluation of Alternative Interment Methods for National Cemeteries.
PB81-123879 1309

ARMY PLANNING

Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

ARMY RESEARCH

Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
AD-A091 988/6 1431

ARMY TRAINING

Civil Affairs Developments.
AD-A091 950/6 1303
Ad Hoc Sub-Group Interim Report on National Training Center,
AD-A092 019/9 1303
Proceedings of the TRADOC/Training Developments Institute Chiefs of Anlaysis Seminar (4th) Held in Hampton, Virginia, 16-18 July 1980.
AD-A092 035/5 1304
Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305

AROMATIC COMPOUNDS

Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332

AROMATIC POLYCYCLIC HYDROCARBONS

Polynuclear Aromatic Compounds. Synthesis and Purification.
PB81-125015 1332

ARSENIC

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335
Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

ARTIFICIAL INTELLIGENCE

Production Rule Systems as an Approach to Interpretation of Ground Sensor Information.
AD-A092 282/3 1355
Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
PB81-132557 1317

ARTIFICIAL SATELLITES

Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456
Cost Estimating Procedure for Unmanned Satellites.
AD-A092 458/9 1457

ARTILLERY SHELLS

Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433
Results from Trials of a New Yawsonde Design.
PB81-120222 1434

ASBESTOS

Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope),

KEYWORD INDEX

PB81-125171 1338

ASBESTOSIS
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

ASPEN TREES
Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291

ASSEMBLERS
Considerations for an Assembler Scheduled Multi-Microprocessor System.
AD-A092 216/1 1355

ASSEMBLY LINES
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390

ASYMPTOTIC NORMALITY
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377

ASYMPTOTIC SERIES
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376

ATLANTA INTERNATIONAL AIRPORT
Task Force Delay Study. William B. Hartsfield Atlanta International Airport. Volume II.
AD-A092 455/5 1290

ATMOSPHERE MODELS
Determination of the Systematic Bias and Variability of the Error of the National Meteorological Center's Six-Layer Baroclinic Model.
AD-A092 372/2 1295

ATMOSPHERES
Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293

Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367

Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1,
AD-B951 736/8 1426

ATMOSPHERIC CHEMISTRY
Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294

ATMOSPHERIC DENSITY
Design Study for Ground-Based Atmospheric Lidar System.
AD-A091 955/5 1292

Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
AD-A092 111/4 1359

ATMOSPHERIC ELECTRICITY
Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 878/9 1292

ATMOSPHERIC MOTION
Kinematic Features of the Large-Scale Mean State Phase II of Gate and Comparison with Phase III Features.
AD-A092 444/9 1295

ATMOSPHERIC PHYSICS
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292

Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

ATMOSPHERIC SCATTERING
Reprint: Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment.
AD-A092 005/8 1440

ATMOSPHERIC SOUNDING
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292

A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293

ATMOSPHERIC TEMPERATURE
Reprint: Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source.
AD-A092 121/3 1294

Shelters
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 684/2 1433

ATOMIC SPECTROSCOPY
Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
AD-A092 419/1 1334

ATOMIC STRUCTURE
Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449

ATOMS
Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
AD-A092 118/9 1333

ATTACK AIRCRAFT
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288

ATTACK HELICOPTERS
The SOTAS-Scout-AAH/HELLFIRE System.
AD-A092 147/8 1288

ATTITUDE SURVEYS
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139065 1311

Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139073 1311

Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139081 1311

Codebook for the Survey of Residential Buildings, Site I, Wave 3. Housing Assistance Supply Experiment.
PB81-139099 1311

Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139180 1312

Codebook for the Attitude Module of the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139198 1313

Codebook for the Attitude Module of the Household Survey, Site II, Wave 4. Housing Assistance Supply Experiment,
PB81-139461 1315

ATTITUDES
A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385

ATTITUDES (PSYCHOLOGY)
Soldier Satisfaction with Life in Restructured Units during Phase I of the Restructuring of the Heavy Division Test.
AD-A092 106/4 1308

ATTRITION
Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
AD-A092 275/7 1304

RTC CREDO: Initial Assessment.
AD-A092 280/7 1304

Personal, Situational, and Organizational Determinants of Navy Enlisted Attrition.
AD-A092 412/6 1305

AUGER ELECTRON SPECTROSCOPY
Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
LYCEN-7868 1373

AURORAS
The Equatorial Latitude of Auroral Activity during 1972-1977,
PB81-132912 1294

AUTOMATIC
Automatic Bandwidth Control System.
PAT-APPL-6-185 472 1412

AUTOMATIC GAIN CONTROL
Radar Sensitivity Time Control Using Range Gated Feedback.
PATENT-4 228 435 1413

AUTOMATIC PROGRAMMING
A Hypothetical Monologue Illustrating the Knowledge Underlying Program Analysis.
AD-A092 294/8 1356

AUTOMATION
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303

Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390

AUTOMOBILES
The Effects of Emission Control System Malfunctions or Maladjustments on Exhaust Emissions.
PB81-122004 1389

Comparison of Gas Phase Hydrocarbon Emissions from Light-Duty Gasoline Vehicles and Light-Duty Vehicles Equipped with Diesel Engines.
PB81-122996 1389

Results of Sulfate Tests on Prototype Vehicles.
PB81-123028 1389

Testing Support for Evaluation of Inspection/Maintenance Issues (Test Group Nos. 6 and 8).
PB81-123499 1389

Motor Vehicles and the Environment: Reply to UNEP (United Nations Environment Programme) Questionnaire.
PB81-130437 1389

AUTOMOTIVE FUELS
Highway Vehicle Systems Contractors Coordination Meeting, Seventeenth Summary Report.
CONF-791082-(Sum.) 1453

AVIATION FUELS
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

AVIATION SAFETY
Summary of Aviation Safety Program Resumes. Cabin Safety.
AD-A091 938/1 1288

Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287

AVIONICS
A Survey of Computer Simulations of Digital Avionics Systems.
AD-A091 943/1 1288

Multiplexing
Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
AD-923 272/9 1358

Trade off analyses
Aircraft Avionics Tradeoff Study.
AD-917 204/0 1358

B-1235 RESONANCES
Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446

BACKSCATTERING
Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
AD-A091 980/3 1293

BACTERIA
Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318

A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
AD-A092 286/4 1318

The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
AD-A092 287/2 1318

Reprint: Migration Rate of Mud Bacteria as a Function of Magnetic Field Strength.
AD-A092 326/8 1340

Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329

BACTERIAL AEROSOLS
Reprint: Survival of Legionella pneumophila in Aerosols: Effect of Relative Humidity.
AD-A091 897/9 1317

Reprint: Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study.
AD-A091 922/5 1317

BACTERIAL DISEASES
Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
AD-A092 286/4 1318

BACTERIAL TOXINS
Reprint: Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine.
AD-A091 900/1 1317

Reprint: Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study.
AD-A091 922/5 1317

The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
AD-A092 287/2 1318

BAG MODEL
Normalizing the Renormalization Group in Deep inelastic Leptoproduction. CTP No. 876.

CONF-800724-44 1443

BAIT FISH
Reprint: The Efficiency of Mollies, 'Poecilia mexicana', as Live Bait for Pole-and-Line Skipjack Fishing: Fishing Trials in the Tropical Central Pacific,
PB81-120693 1316

BALLISTIC TRAJECTORIES
Yaw Card Range Tests of a 30mm Target Projectile.
AD-B014 108/5 1432

BALLOONING INSTABILITY
High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

Ballooning Mode Second Stability Region for Sequences of Tokamak Equilibria.
DOE/ET/53073-T1 1416

BANDWIDTH
Automatic Bandwidth Control System.
PAT-APPL-6-185 472 1412

BARIUM
Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

BARIUM FLUORIDES
Calculation of the Electronic Structure and Contact Hyperfine Parameters of Interstitial Hydrogen in Alkaline - Earth Fluorides.
INIS-mf-5646 1451

Calculation of the Hyperfine Constants of the V /sub K/ Center in CaF sub 2 , SrF sub 2 and BaF sub 2.
INIS-mf-5647 1451

BAROCLINIC MODELS
Determination of the Systematic Bias and Variability of the Error of the National Meteorological Center's Six-Layer Baroclinic Model.
AD-A092 372/2 1295

BARYONS
New Experimental Evidence for a New Interpretation of Flavor SU(3).
DOE/ER/03992-402 1444

BASIC READING
National Endowment for the Humanities Bibliography of Humanistic Reading for Grade Levels 1-8.
ED-183 160 1298

BASS
Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay,
PB81-131765 1317

BATHYMETRY
Bathymetric Data Reduction System.
AD-A091 942/3 1348

BATTLES
An HP-67 Combat Model.
AD-A091 992/8 1402

BEACHES
Experimental Dune Restoration and Stabilization, Nauset Beach, Cape Cod, Massachusetts.
AD-A092 110/6 1340

BEAM DUMPS
Design Considerations for a Steady State Fusion Reactor's Thermal Energy Dump (TED) With Emphasis on SAFFIRE.
COO-2218-182 1415

Structural Evaluation of a DTHR Bundle Divertor Particle Collector.
WFPS-TME-78-100 1420

BEAM FOIL SPECTROSCOPY
Reprint: Calculations of Electron Beam Spreading in Composite Thin Foil Targets,
PB81-126070 1338

BEAM FORMING
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

A Study of Filled and Sparse Line Array Beamformers.
AD-A092 367/2 1407

BEAM STRIPPERS
Production of Optically Thin Free-Standing Oil Films from the Edge of a Rotating Disc.
DOE/ER/01388-457 1441

BEARINGS
Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391

BEAVER DAM LAKE DAM
National Dam Safety Program. Beaver Dam Lake (Inventory Number N.Y. 619), Hudson River Basin, Orange County, New York. Phase I Inspection Report.
AD-A092 225/2 1382

BED NEEDS
Plan for the Reduction of Excess Hospital Beds in the Bay and Saginaw Subareas.
HRP-0902558/6 1320

BEHAVIOR
Illness Behavior in Mid-Life Women. Executive Summary.
PB81-125536 1309

Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321

BEHRENS FISHER PROBLEM
Distributions of Some Matrix Variates and Latent Roots in Multivariate Behrens-Fisher Discriminant Analysis.
AD-A091 960/5 1375

BENEFIT COST ANALYSIS
Cost Benefit Analysis Methods. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851651 1297

Cost Benefit Analysis Methods. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851669 1297

Cost Benefit Analysis Methods. January, 1972-August, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851677 1297

BENTHONIC ZONE
Reprint: Flow Structures of the Benthic Ocean.
AD-A092 325/0 1341

BENZENE
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319

BENZOIC ACID
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332

BENZOIC ACID/BENZYLDIETHYL- ((XYLYLCARBAMOYL)METHYL)- (AMMONIUM-SALT)
Acute Oral Toxicity Studies in Rats and Rabbits,
PB81-139339 1329

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two Year Oral Toxicity Study in Rats. Report Number 2E.
PB81-139347 1329

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two year Oral Toxicity Study in Rats. Report Number 2F.
PB81-139354 1330

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. One Year Oral Toxicity Study in Monkeys. Report Number 3E.
PB81-139362 1330

BENZOIC ACIDS
The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339

BENZOQUINONE/BIS (CARBOETHOXYAMINO)-DIAZIRIDINYL
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

BERING SEA
Reprint: The Snail Resource of the Eastern Bering Sea and Its Fishery,
PB81-120750 1317

BERKELIUM FLUORIDES
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

BERMS
Mathematical Analyses of Landside Seepage Berms.
AD-A092 014/0 1350

BERYLLIUM
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Mechanism of Electric Conductivity in Beryllium Oxide.
IAE-3151 1450

BERYLLIUM OXIDES
Mechanism of Electric Conductivity in Beryllium Oxide.
IAE-3151 1450

BETA DECAY
Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
INIS-mf-5649 1444

BIBLIOGRAPHIES
Energy Use in Transportation. Selected References.
AD-A092 157/7 1361

An Instructional Module on Library Research,
ED-183 153 1298

The Elderly: Social, Health, and Transportation Problems and Services. 1978-August, 1979 (Citations from the NTIS Data Base).
PB81-801573 1315

The Elderly: Social, Health, and Transportation Problems and Services. September, 1979-December, 1980 (Citations from the NTIS Data Base).
PB81-801581 1315

Ice Fog. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801615 1350

Fishways: Design and Operation. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801623 1317

Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387

Foundation Piles for Marine Platforms. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850232 1393

Foundation Piles for Land Construction. December, 1976-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850240 1395

Sailplanes. January, 1972-March, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850596 1290

Sailplanes. January, 1970-July, 1980 (Citations from the Engineering Index Data Base).
PB81-850604 1290

Sailplanes. January, 1970-March, 1980 (Citations from the NTIS Data Base).
PB81-850612 1290

Spent Nuclear Fuel Recovery. May, 1972-February, 1980 (Citations from the NTIS Data Base).
PB81-850687 1430

Nondestructive Testing of Joints. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850919 1397

Nondestructive Testing of Joints. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850927 1397

Regional Seismicity. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850935 1350

Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
PB81-850943 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850950 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850968 1448

Systems Analysis Applied to Energy Forecasting. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-850984 1363

Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851008 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851016 1388

Resource Conservation and Recovery Act (RCRA). January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851024 1363

Heat Exchangers for Space Heating. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851032 1380

Cyclotrons. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851040 1441

Cyclotrons. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851057 1441

Cyclotrons. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).

PB81-851065 1441

Cyclotrons. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851073 1441

Kalman Filters. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851081 1397

Kalman Filters. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851099 1397

Kalman Filters. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851107 1397

Centrifuges. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851115 1397

Centrifuges. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851123 1397

Centrifuges. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851131 1397

Centrifuges. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851149 1397

Extraterrestrial Atmospheres. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851198 1292

Densitometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851248 1397

Densitometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851255 1397

Densitometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851263 1397

Densitometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851271 1397

Demodulators. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851289 1361

Demodulators. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851297 1361

Demodulators. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851305 1361

Extractive Metallurgy. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851313 1372

Extractive Metallurgy. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851321 1372

Extractive Metallurgy. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851339 1372

Ocean Wave Spectra. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851354 1342

Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851362 1348

Accelerometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851495 1397

Accelerometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851503 1397

Accelerometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851511 1398

Accelerometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851529 1398

Hydrocracking. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851602 1339

Hydrocracking. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851610 1339

Hydrocracking. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851628 1339

Incentive Contracts. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851636 1297

Cost Benefit Analysis Methods. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851651 1297

Cost Benefit Analysis Methods. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851669 1297

Cost Benefit Analysis Methods. January, 1972-August, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851677 1297

Vacuum Diffusion Welding. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851685 1390

Long-range Forecasting Methods. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851693 1297

Professional Continuing Education. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851701 1307

Profilometers. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851719 1398

Profit Performance. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851727 1301

Nondestructive Testing of Fractures. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851784 1398

Nondestructive Testing of Fractures. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851792 1398

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851800 1398

Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
PB81-851818 1398

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-851826 1398

Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851834 1398

Educational Level Projections. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851891 1307

Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851909 1297

Computer Simulation of Aircraft. July, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855058 1290

Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855066 1294

Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294

Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855082 1393

Varistors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855090 1353

Varistors. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855108 1353

Plastics Extrusion. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855124 1390

Stepper Motors. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855132 1358

Thermocouple Applications. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855140 1398

Thermocouple Applications. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855157 1398

Computer Controlled Forging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855165 1391

Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391

Sliding Contact Lubricants. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855215 1373

Sliding Contact Lubricants. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855223 1373

Magnetic Separation of Materials. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855231 1391

Magnetic Separation of Materials. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855249 1391

Fire Detection and Extinguishment. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855256 1394

Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855272 1374

Encapsulation of Electronic Circuits. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855298 1391

Ion Exchange Resins. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855306 1339

Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

Polyethylene Adhesives. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855322 1367

Hot Stamping. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855330 1391

Engineering Information Systems. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855348 1299

Mobile Telephone and Paging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855355 1410

Ultrasonic Transducers. July, 1974-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855363 1353

Packaging Machines. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855371 1391

Anodizing Aluminum. January, 1969-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855389 1391

Synthetic Fibers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855397 1369

Nylon Products. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855405 1374

Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855413 1390

Cathode Ray Tubes. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855421 1353

Isostatic Pressing. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855439 1391

Laminar Flow of Fluids in Pipes. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855447 1439

Sheet Metal Forming. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855454 1391

Solenoid Valves. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855462 1394

Jet Stream. June, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-855470 1296

Biotelemetry. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855496 1316

Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855553 1391

BICYCLES

Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator)--Translation.
PB81-125650 1309

BINARY ALLOY SYSTEMS

Composition of Solidified Binary Alloy from a Simple Solidification Model.

ORNL/CSD-66 1371

BIOCHEMISTRY
Chemical and Biochemical Studies of PGBX.
AD-A092 460/5 1315

Annual Progress Report, July 1, 1979-June 30, 1980.
UCLA-12-1253 1322

BIODETERIORATION
Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

BIOFEEDBACK
Reprint: Clinical Applications of Biofeedback.
AD-A092 429/0 1319

BIOGEOGRAPHY
Biotic Communities of the Southwest.
PB81-133134 1342

BIOLOGICAL SAMPLES
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322

BIOLOGICAL STAINS
Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318

A Technique for Staining Extracted Teeth: A Research and Teaching Aid for Bleaching.
AD-A092 358/1 1319

BIOLOGICAL WARFARE AGENTS
Protection
Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
AD-B85 837/5 1399

BIOMATERIALS
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
PB81-132987 1324

BIOTELEMETRY
Biotelemetry. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855496 1316

BIRDS
Peregrine Falcon Study. Final Report.
SAN-2068-1 1388

BIRTH CONTROL
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
PAT-APPL-6-172 086 1325

BISMUTH ALLOYS
Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

BISTATIC RADAR
Design
Modifications to Devenco Model PPS-3A Radar Fence.
AD-B85 234/5 1413

BITUMENS
Tar Sand Extraction by Steam Stimulation and Steam Drive: Measurement of Physical Properties.
DOE/LETC/TPR-80-1761 1345

BLACK COATINGS
Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368

BLACK SHALES
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

BLACKBODY RADIATION
Infrared Measurement Variability Analysis.
AD-A092 068/6 1411

BLAST WAVES
Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
AD-A091 978/7 1435

FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shoc. Overpressures.
AD-A092 143/7 1421

Strong Blast Wave Computer Programs.
AD-A092 346/6 1435

BLENDING
Colored smokes
Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
AD-B004 405/7 1432

BLOCK DESIGN
Construction of PBIB Designs with Triangular and L2 Schemes.
AD-A092 190/8 1376

BLOOD COMPATIBLE MATERIALS
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
PB81-132987 1324

BLOOD GAS ANALYSIS
Blood Gas Analyzer System.
PAT-APPL-6-157 380 1324

BOATS
Advanced Ship System Concepts for Hydrographic Surveying.
AD-A092 374/8 1392

BODIES OF REVOLUTION
Reprint: Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body.
AD-A092 494/4 1438

Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

BOILERS
Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381

BOILING WATER REACTORS
BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking: Resolution of Generic Technical Activity A-10.
NUREG-0619-REV-1 1428

BOLTED JOINTS
Fatigue in Graphite/Epoxy Bolted Joints.
AD-A092 362/3 1388

BOMB RACKS
Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

BOMBS
Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

BONES
Assessment of Non-Invasive Methods of Measuring Bone Repair in Naval Casualty Victims.
AD-A092 145/2 1318

BOOLEAN ALGEBRA
Semiantichains and Unichain Coverings in Direct Products of Partial Orders.
AD-A092 256/7 1377

BOOSTER ROCKET ENGINES
An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456

BOOTS
Production of Insulated Footwear Using Liquid Injection Molding Equipment. 1. Method.
AD-A091 881/3 1400

BORES
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380

BORON
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Effect of Thermal Neutron Irradiation on the Elastic Moduli and Structure of Boron-Containing Crystals. Final Report for the Period 1 October 1976-30 September 1979.
IAEA-R-1800-F 1450

BORON 11
Study of Structure of Nuclei with Neutrons and Nuclear Data Measurements for MFE. Progress Report, September 1, 1979-August 31, 1980.
DOE/ER/02490-1 1443

BORON CARBIDES
Elastic Moduli of Boron Carbide/Copper Composites from -40 exp 0 C to 800 exp 0 C by Ultrasonic Methods.
SAND-80-0881 1369

BOROSILICATE GLASS
Effects of Processing Variables on the Product Quality of Large-Scale Glass Forms Containing Simulated SRP Waste.
DP-MS-80-50 1423

BOSTON HARBOR
Boston Harbor, Massachusetts Main Report for Debris Removal. Volume I. Revision.
AD-A092 396/1 1382

Boston Harbor, Massachusetts Feasibility Report for Debris Removal. Volume 2. Part A-Debris Inventory. Summary Sheets. Part B - Land Enhancement. Summary Sheets. Revision.
AD-A092 397/9 1382

Final Environmental Impact Statement on Debris Removal from Boston Harbor, Massachusetts. Revision.
AD-A092 396/7 1382

BOTTOM BOUNCE
Reprint: A Technique for the Evaluation of Circularly Symmetric Two-Dimensional Fourier Transforms and Its Application to the Measurement of Ocean Bottom Reflection Coefficients.
AD-A091 879/7 1436

Reprint: A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom.
AD-A091 880/5 1436

BOUNDARY LAYER FLOW
Reprint: Some Comments on the Energy Method.
AD-A091 944/9 1438

BOUNDARY LAYER TRANSITION
Reprint: Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body.
AD-A092 494/4 1438

BOUNDARY VALUE PROBLEMS
Propagation, Scattering, and Reflection of Waves in Continuous and Random Inhomogeneous Media, and Nonlinear Boundary Value Problems.
AD-A092 062/9 1436

BRACES
Cyclic Inelastic Buckling of Tubular Steel Braces.
PB81-124885 1395

BRAKING
Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels.
PB81-128753 1389

BRANCHED POLYMERS
Reprint: Configurational Properties of Star-Branched Polymers.
PB81-126195 1339

BRAZING
Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391

BREAKDOWN (ELECTRONIC THRESHOLD)
Studies of Transient Discharges.
AD-A092 482/9 1437

BREAKWATERS
Hardware and Performance Evaluation: Tethered Float Breakwater Near-Shore Ocean Model.
AD-A092 059/5 1381

BREATHING APPARATUS
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323

MK 11 and MK 12 CO2 Scrubber Development.
AD-A092 314/4 1323

BRIDGES (STRUCTURES)
Prediction of Impact Factor for Military Bridges.
PB81-130379 1386

BRINES
Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385

Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

BROADBAND
Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1408

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1408

BROMINE
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

BROOKHAVEN AGS
Acceleration of Polarized Proton at the AGS.
BNL-28323 1441

BROWNS RESERVOIR DAM
National Dam Safety Program, Browns Reservoir Dam (Inventory Number ID NY-763, DEC Number 232 BE-4361), Long Island Basin, Westchester County, New York. Phase I Inspection Report.
AD-A092 037/1 1380

BUBBLES
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

Magnetic domains
Magnetic Bubble Research.

KEYWORD INDEX

AD-B002 919/9 1437

BUILDINGS
Local Energy Monitoring and Control Analysis.
AD-A091 929/0 1378

Operation GREENHOUSE. Scientific Director's Report. Annex 3.0. The Test of Structures.
AD-B951 735/0 1421

Air Infiltration in Buildings: International Energy Agency (IEA). Draft Program Plan.
DOE/CS-0099-D 1379

Risk and Public Policy.
PB81-120057 1394

Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395

General Applicability of a Nonlinear Model of a One Story Steel Frame,
PB81-124877 1395

Cyclic Inelastic Buckling of Tubular Steel Braces,
PB81-124885 1395

Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395

BULK HANDLING
Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855553 1391

BUNDLE DIVERTORS
Structural Evaluation of a DTHR Bundle Divertor Particle Collector.
WFPS-TME-78-100 1420

BUS CONDUCTORS
Fiber optics
Optical Couplers.
AD-B009 489/6 1440

BUSES (VEHICLES)
The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
PB81-120172 1388

Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389

Bus Driver Training Simulator Assessment.
PB81-128977 1307

BUTANE
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

BWR TYPE REACTORS
Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

Developments in Sensitivity Theory.
CONF-800942-10 1430

Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
CONF-800971-2 1427

Tables of Homogeneous Equilibrium Critical Flow Parameters for Water in SI Units.
EGG-2056 1427

Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

BY-PRODUCTS
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

BYPASSES
Reprint: Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
PB81-120701 1340

CADMIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Cadmium Seminar 1980, Proceedings Held at the Lake Palace Hotel, Udaipur on 26 February 1980.
PB81-124109 1372

CADMIUM SULFIDES
Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
AD-A091 997/7 1450

CADMIUM TELLURIDE SOLAR CELLS
Thin Film Cadmium Telluride Solar Cells. Final Technical Report for Period July 1, 1979-August 31, 1980.
DOE/ET/23009-T10 1365

Thin Film Cadmium Telluride Solar Cells. Final Technical Report, July 1, 1979-August 31, 1980.
DOE/ET/23009-T11 1365

CADMIUM TELLURIDES
HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450

0.5 to 6 MeV Ar Ion Induced X-Ray Emission in View to Analytical Application.
CRN-CPR-79-7 1336

Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

Thin Film Cadmium Telluride Solar Cells. Final Technical Report for Period July 1, 1979-August 31, 1980.
DOE/ET/23009-T10 1365

Thin Film Cadmium Telluride Solar Cells. Final Technical Report, July 1, 1979-August 31, 1980.
DOE/ET/23009-T11 1365

CALCIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
DOE/ER/04445-T1 1336

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

CALCIUM 40 TARGET
Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

CALCIUM FLUORIDES
Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335

Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

Calculation of the Electronic Structure and Contact Hyperfine Parameters of Interstitial Hydrogen in Alkaline - Earth Fluorides.
INIS-mf-5646 1451

Calculation of the Hyperfine Constants of the V /sub K/ Center in CaF sub 2 , SrF sub 2 and BaF sub 2.
INIS-mf-5647 1451

CALCIUM PHOSPHATES
A Mechanism for Incorporation of Carbonate into Apatite,
PB81-126104 1320

CALIBRATION
Radiac Ratemeter Calibration Accuracy.
AD-A092 271/6 1421

CALIFORNIUM FLUORIDES
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

CALORIMETERS
Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, July-September 1980.
DOE/ET/13395-6 1453

Neutronics Calculations for the TFTR Neutron Calorimeter.
PPPL-1695 1418

CANCER
Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329

CANDU TYPE REACTORS
Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429

CANISTERS
MK 11 and MK 12 CO2 Scrubber Development.
AD-A092 314/4 1323

CANTILEVER BEAMS
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
AD-A092 375/5 1432

CAPACITY
Plan for the Reduction of Excess Hospital Beds in the Bay and Saginaw Subareas.
HRP-0902558/6 1320

CARBIDES
An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
AD-A092 307/8 1368

Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
DOE/ER/04445-T1 1336

CARBON
Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294

Quantitative Analysis of Carbon in Plutonium.
CEA-R-5013 1335

CARBON 12
Non-Orthogonal Harmonic-Oscillator Basis for Three-Body Problems.
IFT-P-11/79 1444

CARBON 12 TARGET
Analysis of a Quasi-Molecular Type Dissociation Involving Three Charged Fragments. Observation and Discussion of the Production of alpha Particles at Rest from the exp 12 C- alpha - exp 12 C Structure.
CENBG-7919 1442

Complete Fusion exp 20 Ne + exp 12 C at 110 MeV.
ISN-78-26 1445

Induced Isospin Mixing in Direct Nuclear Reactions.
Juel-Spez-47 1445

CARBON 13
Study of Structure of Nuclei with Neutrons and Nuclear Data Measurements for MFE. Progress Report, September 1, 1979-August 31, 1980.
DOE/ER/02490-1 1443

CARBON CARBON COMPOSITES
Analysis of Combustion and Heat Transfer in a Porous Graphite Medium.
AD-A092 094/2 1368

CARBON COMPOUNDS
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368

Perfluorocarbon Ethers.
PAT-APPL-6-182 564 1374

CARBON DIOXIDE
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333

Carbon Dioxide Activation; Formation of trans-(Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454

CARBON DIOXIDE LASERS
Reprint: Frequency-Stabilized Hybrid CO Laser.
AD-A092 053/8 1439

Packaging
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

CARBON FIBERS
Analysis of Combustion and Heat Transfer in a Porous Graphite Medium.
AD-A092 094/2 1368

CARBON MONOXIDE
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335

Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
DOE/ER/05031-2 1336

Catalytic Conversion of Oxygenated Compounds to Low Molecular Weight Olefins. Progress Report for the Period March 1, 1980 to August 31, 1980.
DOE/PC/04717-5 1331

Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
PB81-125189 1338

Mobile Ambient Air Monitor.
RFP-3010 1398

CARBORANES
Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332

Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331

CARCINOGENESIS
Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
AD-A092 249/2 1328

Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.

AECL-6206 1327

CARCINOGENS
Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.
CONF-8010106-2 1319

CARDIAC ASSIST DEVICE
Development and Evaluation of a Long-Term Low Profile Intracorporeal (Abdominal) Left Ventricular Assist Device (THI E-Type ALVAD) Fascicle I.
PB81-131773 1324

CAREERS
Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304

Navy Civilian Careers: A Formulation Problem.
AD-A092 406/8 1305

CARRIER LANDINGS
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287

CASKS
License Application for Type 48HX Cylinder for Shipment of Natural Assay UF sub 6.
KY-697 1422

CASTINGS
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

CATALOGING
The OCLC Serials Sub-System: A First Evaluation.
ED-183 161 1298

CATALOGS
Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938.
AD-A091 915/9 1288

Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950.
AD-A091 916/7 1456

CATALYSIS
The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339

Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 162/7 1333

CATALYSTS
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
DOE/ET/15383-18 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
DOE/ET/15383-22 1364

CATASTROPHIC ILLNESSES
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321

CATHODE RAY TUBES
Cathode Ray Tubes. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855421 1353

CAVITY RESONATORS
Unstable-Resonator and Output-Coupling Design Study for Diffraction Radiation Generator Near-Millimeter Sources.
AD-A092 502/4 1439

Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361

CELL LINES
Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317

CELL MEMBRANES
Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315

CEMETERIES
Evaluation of Alternative Interment Methods for National Cemeteries.
PB81-123879 1309

CENTRIFUGES
Horizontal Flow-Through Coil Planet Centrifuge.
PATENT-4 228 950 1396

Centrifuges. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851115 1397

Centrifuges. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851123 1397

Centrifuges. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851131 1397

Centrifuges. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851149 1397

CERAMIC MATERIALS
Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
AD-A092 253/4 1367

Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367

CERAMICS
Ceramic Materials for Fusion Reactors. Interim Report.
EPRI-AP-1499 1367

CERENKOV RADIATION
Measurement of Pumped Superluminal Electromagnetic Radiation.
AD-A092 306/0 1441

CERIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

CERIUM FLUORIDES
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

CERIUM OXIDES
Study of the Kinetics of Oxygen Redistribution in UOsub(2+ X) and UCeO sub 2 Due to a Temperature Gradient.
CEA-R-5020 1336

CESIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
DOUNREAY-TRANS-826 1337

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

CESIUM 134
Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

CESIUM 137
Exchange of Lyotropic Series Cations by Micaceous Vermiculite and Its Weathering Products Determined by Electron Microscopy and Radiochemical Analysis. Final Technical Report, June 1, 1965-October 31, 1978.
DOE/EV/01515-84 1426

Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

CHAIN CONVEYORS
Noise Reduction of Chain Conveyors. Volume I.
PB81-130833 1348

CHANGE POINTS
A Non-Parametric Approach to the Change-Point Problem.
PB81-132854 1377

CHANNEL FLOW
Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
PB81-124158 1384

CHANNEL IMPROVEMENTS
Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
PB81-124158 1384

CHARGE CARRIERS
Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450

CHARGE COUPLED DEVICES
Signal Processing Circuit Development.
AD-A092 371/4 1411

CHARGE TRANSFER
Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
AD-A092 333/4 1334

CHARM PARTICLES
Open and Hidden Charm Muoproduction.
LBL-11561 1446

CHARMED MESON RESONANCES
Hadronic Decays of the eta/sub C/.
SLAC-PUB-2594 1446

CHEMICAL AGENT DETECTORS
Chemical Agent Detection Method and Apparatus.
PATENT-4 225 316 1399

CHEMICAL ANALYSIS
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322

CHEMICAL BONDS
Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331

Facile Cleavage of the Mo= Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

CHEMICAL DISSOCIATION
Reprint: The Dissociation Energies of Gaseous Praseodymium- and Neodymium-Monoxides and Their Structure.
AD-A092 486/6 1334

CHEMICAL EFFLUENTS
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

CHEMICAL FEEDSTOCKS
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

CHEMICAL IONIZATION MASS SPECTROSCOPY
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322

CHEMICAL LASERS
One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
AD-A092 189/0 1333

Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439

CHEMICAL REACTION KINETICS
MAKSIMA-CHEMIST: A Program for Mass Action Kinetics Simulation by Automatic Chemical Equation Manipulation and Integration Using Stiff Techniques.
AECL-6413 1335

CHEMICAL TREATMENT
Improving the Removal of Lint from Cottonseed.
PAT-APPL-6-180 542 1390

Solubilization of Lignocellulosic Materials.
PAT-APPL-6-180 546 1338

CHEMICAL WARFARE AGENTS
Protection
Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
AD-B85 837/5 1399

CHEMILUMINESCENCE
Chemiluminescence of Secondary Peroxyesters.
AD-A092 322/7 1334

Chemically Initiated Electron-Exchange Luminescence.
AD-A092 355/7 1334

On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334

Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

KEYWORD INDEX

CHEMISORPTION
Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339

CHEMISTRY
UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
AD-A092 213/8 1333

CHEMOTHERAPEUTIC AGENTS
A Comparison of the Inflammatory Response Produced by Commercial Eugenol and Purified Eugenol,
AD-A091 901/9 1325

CHEMOTHERAPY
Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326

CHERENKOV COUNTERS
Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters,
DOE/ER/14529-1 1422

CHESAPEAKE BAY
Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329

Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay,
PB81-131765 1317

Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
PB81-132052 1323

On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
PB81-132094 1340

CHILDREN
Housing Our Families,
PB81-139453 1314

CHLORINATION
Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies,
NUREG/CR-1299 1337

Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329

CHLORINE
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

0.5 to 6 MeV Ar Ion Induced X-Ray Emission in View to Analytical Application.
CRN-CPR-79-7 1336

Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

CHLOROPLASTS
Energetic Control of Intact Chloroplast Photosynthesis.
BNL-28423 1315

CHLOROQUINE
Reprint: Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine.
AD-A091 900/1 1317

CHOLESTEROL
Reprint: Developing Definitive Methods for Human Serum Constituents--A Progress Report from the CAP (College of American Pathologists) NBS Research Associate,
PB81-133316 1326

CHROMIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329

CHROMIUM-MOLYBDENUM STEELS
Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

CHROMOSOMAL ABERRATIONS
Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326

CHROMOSOMES
Organization of the R Chromosome Region in Maize. Triennial Report.
DOE/EV/01300-45 1316

Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326

Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317

CHRONIC OBSTRUCTIVE LUNG DISEASES
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

CIRCUIT ANALYSIS
Thermal Analysis and Design of Air Cooled Electronic Circuit Boards Using a Desktop Computer.
AD-A092 309/4 1359

CIRCUIT BREAKERS
Theory of the Arc Discharge in Air Blast Breakers.
LA-8488-T 1417

CIRCUITS
Encapsulation of Electronic Circuits. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855298 1391

CIVIL AFFAIRS
Civil Affairs Developments.
AD-A091 950/6 1303

Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349

CIVIL AVIATION
Census of U.S. Civil Aircraft, Calendar Year 1978.
AD-A092 414/2 1288

CIVILIAN PERSONNEL
Navy Civilian Careers: A Formulation Problem.
AD-A092 406/8 1305

CLASSIFICATION
Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354

CLATHRATES
Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
DOE/ER/04445-T1 1336

CLEANING COMPOUNDS
A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373

CLEAVAGE
Facile Cleavage of the Mo= Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

CLIPPER CIRCUITS
Long Range Listening System.
PATENT-4 223 311 1410

CLOUD PHYSICS
A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293

A New Horizontal Gradient, Continuous Flow, Ice Thermal Diffusion Chamber and Detailed Observation of Condensation-Freezing and Deposition Nucleations.
AD-A092 479/5 1294

CLUTCHES
Clutch Protection Circuit.
PATENT-4 227 232 1361

COAL
Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381

Formulas for Calculating the Heating Value of Coal and Coal Char: Development, Tests, and Uses.
CONF-800814-25 1452

Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

COAL DEPOSITS
Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851362 1348

COAL-FIRED MHD GENERATORS
Study of Seed Reprocessing Systems for Open Cycle Coal Fired MHD Power Plants.
DOE/ET/15613-T1 1364

COAL FIRED POWER PLANTS
Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383

COAL GASIFICATION
Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

COAL GASIFICATION PLANTS
State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393

State-of-the-Art Assessments on Critical Coal Conversion Equipment.
CONF-801090-3 1330

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

COAL INDUSTRY
Marketing of Coal Mining Equipment. Evaluation of Present Techniques: Suggestions to Aid Commercialization. Final Report.
DOE/RA/20014-T1 1345

COAL LIQUEFACTION
Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

Two Stage Liquefaction of Coal.
PAT-APPL-6-124 057 1331

COAL LIQUEFACTION PLANTS
State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393

State-of-the-Art Assessments on Critical Coal Conversion Equipment.
CONF-801090-3 1330

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

COAL LIQUIDS
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

Solvent Refined Coal (SRC) Process.
DOE/ET/10104-T4(V.1) 1330

Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, April-June 1979 and July-September 1979.
DOE/ET/13395-1/2 1453

Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, October-December 1979 and January-March 1980.
DOE/ET/13395-3/4 1453

Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, April-June 1980.
DOE/ET/13395-5 1453

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

COAL MINES
General Application of the Critical Path Method to Resource Characterization and Planning for Underground Coal Mining. Final Technical Report.
DOE/ET/11268-3 1345

Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347

Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344

Interactive Mine-Power-System Analysis--APL Fault Program.

PB81-130858 1348

Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387

COAL PREPARATION
Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

COAL PREPARATION PLANTS
Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

COASTAL REGIONS
A Coordination, Education, and Mitigation Model for Disaster Preparedness in Coastal Areas.
AD-A092 173/4 1309

COATINGS
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368

An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
AD-A092 307/8 1368

Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368

COBALT
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1348

COBALT 59 TARGET
Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443

COBALT ALLOYS
Moessbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371

COBALT COMPOUNDS
Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373

Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

COCCIDIOIDES IMMITIS
Reprint: Ketoconazole in Early and Late Murine Coccidioidomycosis.
AD-A091 921/7 1317

CODEINONE
Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331

CODING
Speech Algorithm Optimization at 16 KBPS.
AD-A092 010/8 1407

Information theory
Redundant Area Coding Study.
AD-888 625/1 1358

COGENERATION
Industrial Cogeneration Case Study No. 3: Mead Corporation Paper Mill, Kingsport, Tennessee.
ANL/CNSV-TM-42 1364

COKE
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T1 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T4 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T5 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T6 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T7 1345

COLLECTIVE BARGAINING
A Six State Study of Impasse Procedures in the Public Sector.
PB81-130718 1307

COLLISION BROADENING
Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335

COLLISION RESEARCH
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394

COLONIAL HISTORY (UNITED STATES)
A Guide to Dutch Manuscripts Relating to New Netherland in United States Repositories.
ED-183 170 1298

COLOR MODEL
Color in Internal Supersymmetry Unification.
DOE/ER/03992-414 1444

COLOR TELEVISION
Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354

COLOR TELEVISION TUBES
Dynamic Color Scanner System.
AD-B015 629/9 1352

COLORADO
Analysis of Baseline Data from Federally Leased Oil Shale Tracts in Colorado and Utah.
DOE/EV/70031-5 1383

Aerial gamma Ray and Magnetic Survey, Montrose Detail Projects, Colorado. Volume I. Final Report.
GJBX-212(80) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 1, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA1) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 2, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA2) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 3, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA3) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 4, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA4) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 5, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA5) 1347

The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387

COLORED SMOKES
Hazards
Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
AD-B004 405/7 1432

COMBAT INFORMATION CENTERS
Division Real Time Applications Report (DIVRAS).
AD-A092 066/0 1402

Division Real Time Applications Report (DIVRAS), Software Functional Description.
AD-A092 067/8 1354

COMBAT SUPPORT
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401

COMBINERS (ELECTRONICS)
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409

COMBUSTION
Analysis of Combustion and Heat Transfer in a Porous Graphite Medium.
AD-A092 094/2 1368

Detailed Modelling of Combustion Systems.
AD-A092 234/4 1452

AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455

COMBUSTION CHAMBERS
Influence of Air Motion Variation on the Performance of a Direct-Injection Stratified-Charge Engine.
SAND-79-8756 1456

COMBUSTORS
AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455

Improved Film Cooled Annular Combustor.
PAT-APPL-6-185 473 1455

COMMAND AND CONTROL SYSTEMS
Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408

Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408

User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403

Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408

The Design, Development, Demonstration and Transfer of Advanced Command and Control (C2) Computer-Based Systems.
AD-A092 293/0 1356

Data processing
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
AD-906 757/0 1409

Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409

COMMERCIAL AVIATION
A Feasibility Study for Advanced Technology Integration for General Aviation.
AD-A092 437/3 1289

Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287

COMMERCIAL BUILDINGS
Solar Heating System at Security State Bank, Starkville, Mississippi. Final Report.
DOE/NASA/CR-161550 1379

COMMUNICATION AND RADIO SYSTEMS
Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1408

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1408

COMMUNICATION EQUIPMENT
Performance of ANDVT HF Modem with Peak Clipping.
AD-A092 114/8 1408

Switching circuits
Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.
AD-892 041/5 1359

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
AD-892 042/3 1359

Thick films
Some Applications of Hybrid Thick Film Technology.
AD-917 846/8 1360

COMMUNICATION TERMINALS
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
AD-A092 113/0 1408

Simulation
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409

COMMUNICATIONS
Environmental Assessment for the Satellite Power System: Concept Development and Evaluation Program - Effects of Ionospheric Heating on Telecommunications.
DOE/ER/10003-T2 1383

COMMUNICATIONS NETWORKS
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407

Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

COMMUNITIES
Photovoltaic Power System at Natural Bridges National Monument.
DOE/ET/20279-105 1365

COMMUNITY HEALTH INFORMATION PROFILES
Community Health Profiles 1979 Rhode Island Dept. of Health.
HRP-0902554/5 1320

COMPARISON
Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449

COMPOSITE MATERIALS
Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368

Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368

Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
AD-A092 292/2 1288

Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353

Elastic Moduli of Boron Carbide/Copper Composites from -40 exp 0 C to 800 exp 0 C by Ultrasonic Methods.
SAND-80-0881 1369

COMPOSITE STRUCTURES
Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
AD-A092 292/2 1288

COMPOSITES
Reprint: Calculations of Electron Beam Spreading in Composite Thin Foil Targets,

KEYWORD INDEX

PB81-126070 1338

COMPREHENSIVE EMPLOYMENT AND TRAINING ACT
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
PB81-125619 1303

COMPRESSED AIR ENERGY STORAGE
Synthesis of Research and Development in Mechanical Energy Storage Technologies. Progress Report, September 1, 1979-May 31, 1980.
DOE/ET/26106-T1 1366

COMPRESSIVE PROPERTIES
Effect of Cross Grain on Stress Waves in Lumber.
AD-A091 949/8 1374

COMPUTER AIDED DESIGN
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351

Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

A New Computer Program for Plant Layout Design - OPDEP Optimal Plant Design and Evaluation Program.
AD-A092 363/1 1390

Program PHFMOPT, Planing Hull Feasibility Model, User's Manual.
AD-B033 624/8 1393

Interactive Graphics, the Design Process, and Education.
UCRL-52916 1357

COMPUTER AIDED DESIGN OF AIRCRAFT
Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294

COMPUTER AIDED INSTRUCTION
Computer-Managed Instruction in the Navy. I. Research Background and Status.
AD-A092 481/1 1305

COMPUTER APPLICATIONS
User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403

Design and Implementation of Multi-Input Adaptive Signal Extractions.
AD-A092 265/8 1355

The Design, Development, Demonstration and Transfer of Advanced Command and Control (C2) Computer-Based Systems.
AD-A092 293/0 1356

COMPUTER ARCHITECTURE
Hardware Realizations for Digital Signal Processing.
AD-A091 904/3 1359

Network Management Research.
AD-A092 055/3 1407

Design of a System Initialization Mechanism for a Multiple Microcomputer.
AD-A092 137/9 1354

Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.
AD-A092 146/0 1355

Design and Analysis of Relational Join Operations of a Database Computer (DBC).
AD-A092 230/2 1355

Detailed Design of the Kernel of a Real-Time Multiprocessor Operating System.
AD-A092 301/1 1356

Aircraft Avionics Tradeoff Study.
AD-917 204/0 1358

COMPUTER ASSISTED INSTRUCTION
The Question Episode--Building Block of Teaching with a Computer. The Illinois Series on Educational Application of Computers, No. 4e,
ED-183 184 1305

Tutorial Instruction on a Computer. The Illinois Series on Educational Application of Computers, No. 6e,
ED-183 186 1305

Instructional Games and the Computer-Using Teacher. The Illinois Series on Educational Application of Computers, No. 9e,
ED-183 189 1306

COMPUTER CODES
Interactive Code for Examining Hypothetical Distributions of Experimental Data.
CONF-8010106-2 1357

One-Leg Formulas for Stiff Differential Equations.
COO-2383-0070 1357

Continuing Development of the DEROB System. Quarterly Report, July 1, 1980-September 30, 1980.
DOE/CS/30254-1 1357

SOLCOST Support and Maintenance. Quarterly Technical Status Report.
DOE/ET/20108-T1 1357

Abstract Model of the Finite Element Method.
LA-8468-T 1377

Prospects for the Recovery of Uranium from Seawater. Final Report.
MIT-EL-80-001 1371

SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
ORNL/CSD-53 1428

GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
ORNL/TM-7341 1446

COMPUTER COMMUNICATIONS
Network Management Research.
AD-A092 055/3 1407

ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407

Dynamic Linking in a Microcomputer Environment.
AD-A092 404/3 1356

COMPUTER GRAPHICS
WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356

Basic Graphical Data Management System (BAGDAMS Version 1.0). User's Guide and Reference Handbook.
AECL-6487 1356

MC Painting Manual A: User's Guide. The Illinois Series on Educational Applications of Computers, No. 33. Revised Edition,
ED-183 201 1306

Interactive Graphics, the Design Process, and Education.
UCRL-52916 1357

COMPUTER MANAGED INSTRUCTION
Documentation--A Computerized Instructional Resource Management System. The Illinois Series on Educational Application of Computers. No. 26e,
ED-183 200 1306

COMPUTER NETWORKS
Computer Science and Technology: An Analytic Study of a Shared Device Among Independent Computing Systems.
PB81-125783 1357

Symbolic Software for CTR Research.
UCRL-15284 1419

COMPUTER ORIENTED PROGRAMS
Getting Started in School Computing: Preparing to Purchase. The Illinois Series on Educational Application of Computers, No. 14e,
ED-183 192 1306

COMPUTER PROGRAM DOCUMENTATION
NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
AD-A091 939/9 1421

Harwell Subroutine Library. A Catalogue of Subroutines (1973),
AD-A092 033/0 1375

Harwell Subroutine Library. A Catalogue of Subroutines (1973). Supplement Number 2.
AD-A092 034/8 1375

Documentation for an Improved Version of HULIMP, A Ship Hull Improvement Computer Program Based on the Baba Theory.
AD-A092 133/8 1392

Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

An ADA Language Model of the AN/SPY-1A Component of the AEGIS Weapon System.
AD-A092 260/9 1412

Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452

A New Computer Program for Plant Layout Design - OPDEP Optimal Plant Design and Evaluation Program.
AD-A092 363/1 1390

Documentation for the Ship Hydrostatics Computer Program HYDRO.
AD-A092 454/8 1393

COMPUTER PROGRAMMING
Software Project Forecasting,
AD-A091 923/3 1353

Bathymetric Data Reduction System.
AD-A091 942/3 1348

Design of a System Initialization Mechanism for a Multiple Microcomputer.
AD-A092 137/9 1354

Efficient Coding of the Prediction Residual.
AD-A092 198/1 1408

Mapping
AS-11/B Stereoplotter Experiments and Studies.
AD-900 360/9 1341

Photographic rectifiers
Off-Line Orthographic Printer.
AD-919 575/1 1399

COMPUTER PROGRAMS
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454

Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293

PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438

Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408

Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
AD-A092 318/5 1413

Strong Blast Wave Computer Programs.
AD-A092 346/6 1435

WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356

Diagnostic Software Development for a Real-Time Spectral Analysis System.
AD-A092 441/5 1356

Documentation for the Ship Hydrostatics Computer Program HYDRO.
AD-A092 454/8 1393

Congrats Temperature and Salinity to Sound Speed Conversion.
AD-B022 435/2 1436

Generalized Monitoring Facility. Revision I. Installation Guide (W6.4.1).
AD-B031 430/2 1356

Laser Safety Computer Program.
AD-B032 525/8 1439

Documentation--INFO: A Small Computer Data Base Management System for School Applications. The Illinois Series on Educational Application of Computers, No. 24e,
ED-183 199 1299

Rotor blades (Rotary wings)
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438

Transonic flow
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
AD-B007 943/4 1356

COMPUTER SOFTWARE
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409

COMPUTERIZED SIMULATION
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

A Congeries of Numerical Models used at the BRL.
AD-A091 886/2 1434

Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
AD-A091 933/2 1359

NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
AD-A091 939/9 1421

A Survey of Computer Simulations of Digital Avionics Systems.
AD-A091 943/1 1288

An HP-67 Combat Model.
AD-A091 992/8 1402

A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358

An Interactive Code for a Pressurized Water Reactor Incorporating Temperature and Xenon Feedback.
AD-A092 304/5 1427

Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333

QUANTA - Users Manual.
AD-A092 379/7 1403

A Comparison Study and Software Implementation of NORDA Ocean Models.
AD-A092 424/1 1341

Program Manual NSUP.
AD-A092 474/6 1393

The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.

AD-B040 233/9 1435

COMPUTERIZED SUMULATION
Computer Simulation of Aircraft. July, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855058 1290

COMPUTERS
Design and Analysis of Relational Join Operations of a Database Computer (DBC).
AD-A092 230/2 1355

Generalized Monitoring Facility. Revision I. Installation Guide (W6.4.1).
AD-B031 430/2 1356

Verification of Timing Routines.
LA-UR-80-3099 1357

Air force operations
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
AD-906 757/0 1409

CONCRETE PAVEMENTS
Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384

CONCRETES
ENDF/B Based 27-Group Cross-Sections for Some Rare-Earth and Concrete Elements.
INDC(IND)-25/GV 1422

CONDENSERS
Component Test Procedure for the Ground Demonstration System Jet Condenser Focusing.
DOE/ET/33001-T29 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Jet Condenser Orifice Performance. 77-KIPS-103.
DOE/ET/33001-T33 1431

CONFIDENCE LIMITS
1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

CONFINEMENT (GENERAL)
NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414

CONFORMAL GROUPS
Structure of Representations of Conformal Supergroup in the OSp(1,4) Basis.
JINR-R-2-12670 1449

CONFORMAL STRUCTURES
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359

CONSTANTS
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

CONSTRUCTION
Wood Products Used in Military Construction in the United States - 1962 and 1978.
AD-A092 022/3 1374

Wood Products Used in Constructing Conservation and Development Projects by the Corps of Engineers in the United States - 1962 and 1978.
AD-A092 023/1 1374

CONSTRUCTION EQUIPMENT
Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388

CONSTRUCTION INDUSTRY
Dimensional Co-ordination in Building (Comhordu Toiseach.san bhFoirgniocht).
PB81-122509 1394

CONSTRUCTION JOINTS
Strength of Timber Roof Connections Subjected to Cyclic Loads.
PB81-139222 1395

CONSTRUCTION MATERIALS
Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388

Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388

CONTAINERS
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433

Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424

Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
UCRL-84153 1425

CONTAINMENT (NUCLEAR REACTORS)
Late Time Containment.
AD-A092 214/6 1421

CONTAINMENT SHELLS
Seismic Transient Analysis of a Containment Vessel with Penetrations.
HEDL-SA-1955 1428

CONTAMINANTS
Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
AD-A092 289/8 1373

CONTINENTAL SHELVES
Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340

CONTINUING EDUCATION
Professional Continuing Education. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851701 1307

CONTINUOUS WAVE RADAR
Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295

Warning systems
Lightweight radar alarm system. Vol. 2.
AD-482 913/1 1413

Lightweight radar alarm system. Vol. 1.
AD-482 920/6 1413

CONTINUOUSLY REINFORCED CONCRETE
Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384

CONTINUUM MECHANICS
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435

CONTRACTS
Incentive Contracts. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851636 1297

CONTROL SYSTEMS
Local Energy Monitoring and Control Analysis.
AD-A091 929/0 1378

Guidance and Control of Anti-Tactical Ballistic Missiles.
AD-A092 015/7 1400

Automatic Bandwidth Control System.
PAT-APPL-6-185 472 1412

CONTROL THEORY
Approximate Linear Regulator and Kalman Filter.
AD-A092 176/7 1376

Approximation Techniques for Parameter Estimation in Hereditary Control Systems.
AD-A092 184/1 1376

Nonlinear Semigroup for Controlled Partially Observed Diffusions.
AD-A092 188/2 1376

Optimal Control of Systems with Uncertainty.
AD-A092 389/6 1377

CONTROLLED NUCLEAR FUSION
NRL Inertial Confinement Fusion Theory Program 1979 Annual Report, October 1978 - December 1979.
AD-A092 470/4 1414

NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414

CONVENTIONAL WARFARE
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401

CONVERGENCE
Convergence Theory for Unconstrained Minimization.
AD-A092 254/2 1376

COOLING
Cooling Systems (Automotive).
AD-A092 236/9 1434

COOLING TOWERS
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379

COOLING + VENTILATING EQUIPMENT
Cryogenics
Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/8 1379

COOLING WATER
Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
PB81-132052 1323

COORDINATES
Simple Algorithms for Calculation of Scale Factors for Plan Coordinate Systems (1927 NAD and 1983 NAD).
AD-A092 461/3 1377

COPPER
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

COPPER ALLOYS
Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

Moessbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371

Elastic Moduli of Boron Carbide/Copper Composites from -40 exp 0 C to 800 exp 0 C by Ultrasonic Methods.
SAND-80-0881 1369

CORN
Apparatus for Removing Corn from Cob.
PAT-APPL-6-187 380 1323

CORONARY CARE UNITS
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321

CORONARY DISEASE
USAWC Coronary Risk and Fitness Analysis.
AD-A092 209/6 1318

CORPORATIONS
Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851909 1297

CORRELATORS
Integrated circuits
LSI Correlator.
AD-887 376/2 1359

LSI Correlator.
AD-890 094/6 1359

LSI Correlator.
AD-892 277/5 1360

LSI Correlator.
AD-900 818/6 1360

CORROSION
Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

CORROSION TESTS
Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys.
PB81-121865 1372

COST ACCOUNTING
Cost Impact Assessment of Cost Accounting Practice Changes.
AD-A092 434/0 1296

COST ANALYSIS
Army 86 Cost Sensitivity Analysis Verification.
AD-A091 889/6 1401

Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978.
AD-A092 043/9 1454

Analyzing Allowance Program Administrative Costs: Account Structures and Methodology.
PB81-139412 1314

COST BENEFIT ANALYSIS
Cost Benefit Analysis Methods. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851651 1297

Cost Benefit Analysis Methods. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851669 1297

Cost Benefit Analysis Methods. January, 1972-August, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851677 1297

COST EFFECTIVENESS
Overhead Costs and Rates in the U.S. Defense Industrial Base. Volume 1.
AD-A091 963/9 1299

Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.

AD-A092 146/0 1355

Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
PB81-122962 1320

COST ESTIMATES

Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978.
AD-A092 043/9 1454

Cost Estimating Procedure for Unmanned Satellites.
AD-A092 458/9 1457

Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321

COST IMPACT ASSESSMENT

Cost Impact Assessment of Cost Accounting Practice Changes.
AD-A092 434/0 1296

COTTON SEED

Improving the Removal of Lint from Cottonseed.
PAT-APPL-6-180 542 1390

COTTON TEXTILES

Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437

COUNTERMEASURES

Noise generators

Voice Countermeasures Effectiveness Analysis.
AD-912 392/8 1410

COUPLERS

Optical circuits

Optical Couplers.
AD-B009 489/6 1440

COUPLING (INTERACTION)

Evaluation of Time Domain EM Coupling Techniques. Volume I.
AD-A092 031/4 1452

Evaluation of Time Domain EM Coupling Techniques. Volume II.
AD-A092 032/2 1452

Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
AD-A092 119/7 1333

CRACK PROPAGATION

The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449

CRACKS

Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
AD-A092 186/6 1369

Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449

Reprint: Importance of Crack Tip Radii in Fracture and Fatigue of Glass.
AD-A092 493/6 1367

CRATERING

Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

CREATINE PHOSPHOKINASE

Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

CREDIT

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
PB81-139271 1301

Study to Indentify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part II: Appendix 1, Home Owner Questionnaire.
PB81-139289 1301

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part III: Appendix 2, Lending Institution Questionnaire.
PB81-139297 1301

CRIMES

Factors Influencing Crime and Instability in Urban Housing Developments,
PB81-128670 1309

CRIMINOLOGY

Reference Materials in Criminal Justice: A Selective, Annotated Bibliography,
ED-183 166 1298

CRISIS MANAGEMENT

Food System Support of the Relocation Strategy in California. Volume I. Analysis.
AD-A092 056/1 1400

Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
AD-A092 164/3 1400

CRITICAL FLOW

Tables of Homogeneous Equilibrium Critical Flow Parameters for Water in SI Units.
EGG-2056 1427

CROSS SECTIONS

A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333

CROSSLINKING

Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855272 1374

CRYOGENICS

Avionics

Development of a Temperature Controller for a Vuilleumier (VM) Cycle Power Cylinder.
AD-B007 816/2 1378

Magnesium alloys

Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
AD-902 944/8 1379

Refrigeration systems

Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379

CRYSTAL STRUCTURE

Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
AD-A092 118/9 1333

Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

CRYSTALLIZATION

An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367

CRYSTALLOGRAPHY

Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

CRYSTALS

Reprint: The Lowest Laser-Raman Active Accordion (ALR) Type Oscillations in Crystalline Polymers,
PB81-126187 1339

CULVERTS

Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387

CURING

Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855272 1374

CURIUM 248 TARGET

New Results on the Spectroscopy and Dynamics of Fission.
DOE/ER/01388-452 1443

CURIUM FLUORIDES

Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

CUTTERS

Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
AD-A092 365/6 1391

CUTTING TOOLS

Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433

CYANIDES

Color Centers in KCN: a Structural Analysis of Crystalline Domains.
INIS-mf-5644 1437

CYCLIC TESTS

Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
AD-A092 473/8 1370

CYCLOALKANES

2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes
PATENT-4 181 654 1332

CYCLONIC RINGS

Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342

CYCLOTRONS

Cyclotrons. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851040 1441

Cyclotrons. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851057 1441

Cyclotrons. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851065 1441

Cyclotrons. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851073 1441

CYLINDRICAL BODIES

Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368

CYTOSINE NUCLEOSIDES

Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332

D-1865 RESONANCES

Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446

Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446

DAMAGE

An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
AD-A092 307/8 1368

DAMAGE ASSESSMENT

NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
AD-A091 939/9 1421

Highway Operation and Plant Damage.
PB81-133159 1387

DAMPING

Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368

DAMS

National Dam Safety Program. Mt. Beacon Reservoir (Inventory Number NY-26), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 038/9 1381

National Dam Safety Program. Harlem Valley Reservoir (Inventory Number N.Y. 273), Housatonic River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 040/5 1381

National Dam Safety Program. Garnerville Dam (Inventory Number N.Y. 744), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 042/1 1381

National Dam Safety Program. Wappingers Falls Dam (I.D. Number N.Y. 3, D.E.C. 613A), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 170/0 1381

National Dam Safety Program. Tivoli Lake Dam (Inventory Number N.Y. 52), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 219/5 1381

National Dam Safety Program. Beaver Dam Lake (Inventory Number N.Y. 619), Hudson River Basin, Orange County, New York. Phase I Inspection Report,
AD-A092 225/2 1382

Corps of Engineers Hydraulic Design Criteria. Volume I.
AD-A092 237/7 1382

Corps of Engineers Hydraulic Design Criteria. Volume 2.
AD-A092 238/5 1382

Reprint: Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
PB81-120701 1340

DARRIEUS ROTORS

Effects of Flow Curvature on the Aerodynamics of Darrieus Wind Turbines.
ORO-5135-77/7 1362

DATA ACQUISITION

An Improved Flight Data Transcriber.
AD-A091 981/1 1398

Concepts for Data Collection in the Arctic.
AD-A092 476/1 1349

DATA ACQUISITION SYSTEMS

STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421

DATA ANALYSIS

Interactive Code for Examining Hypothetical Distributions of Experimental Data.

CONF-8010106-2 1357

DATA BASES
Design and Analysis of Relational Join Operations of a Database Computer (DBC).
AD-A092 230/2 1355

A Feasibility Study for Advanced Technology Integration for General Aviation.
AD-A092 437/3 1289

Natural Language Data Base Query.
AD-A092 500/8 1302

Data Bases Available at the National Bureau of Standards Library,
PB81-132870 1299

DATA COMPRESSION
Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
AD-A092 395/3 1408

DATA LINKS
Interfaces
Optical Couplers.
AD-B009 489/6 1440

DATA MANAGEMENT
Network Management Research.
AD-A092 055/3 1407

Security Assistance Data Element Catalog (SADEC).
AD-A092 166/8 1355

Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408

Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408

DATA PROCESSING
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

An Improved Flight Data Transcriber.
AD-A091 981/1 1398

Computer Science and Technology: An Analytic Study of a Shared Device Among Independent Computing Systems.
PB81-125783 1357

Aerial photographs
Photo-Carto Interface.
AD-893 054/7 1340

Command and control systems
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
AD-906 757/0 1409

Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409

Gas lasers
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

Stereophotogrammetry
Off-Line Orthographic Printer.
AD-919 575/1 1399

DATA PROCESSING SECURITY
Security Assistance Data Element Catalog (SADEC).
AD-A092 166/8 1355

DATA RATE
Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1408

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1408

DATA REDUCTION
Bathymetric Data Reduction System.
AD-A091 942/3 1348

DATA STORAGE SYSTEMS
Microfiche
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

DATA TRANSMISSION SYSTEMS
Use of a Microprocessor to Implement an ADCCP Protocol (Federal Standard 1003).
AD-A092 272/4 1408

Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

Digital systems
Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
AD-B000 632/0 1409

Search radar
Data Link, Helicopter Supported Radar.
AD-885 551/2 1413

DAVIS BESSE-1 REACTOR
Technical Evaluation of the Noise and Isolation Testing of the Reactor Protection System for the Davis Besse Nuclear Power Station, Unit 1.
UCID-16683 1428

DAWN CHORUS
Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855066 1294

Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294

DEAMINASES/PYRIMIDINE
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338

DEAMINOSES/CYTIDINE
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338

DEATH
Evaluation of Alternative Interment Methods for National Cemeteries.
PB81-123879 1309

DEBRIS
Boston Harbor, Massachusetts Main Report for Debris Removal. Volume I. Revision.
AD-A092 396/1 1382

Boston Harbor, Massachusetts Feasibility Report for Debris Removal. Volume 2. Part A-Debris Inventory. Summary Sheets. Part B - Land Enhancement. Summary Sheets. Revision.
AD-A092 397/9 1382

Final Environmental Impact Statement on Debris Removal from Boston Harbor, Massachusetts. Revision.
AD-A092 398/7 1382

DECISION AIDS
Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.
AD-A091 956/3 1308

DECISION MAKING
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.
AD-A091 956/3 1308

Pilot Automated Influence Diagram Decision Aid.
AD-A092 129/6 1308

Exchange Service Station Gasoline Pumping Operation Simulation.
AD-A092 278/1 1378

An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
AD-A092 405/0 1399

Decision Flexibility in a Learning Environment.
AD-A092 498/5 1309

Army operations
The Delphi Technique and ITS Applicability to Army Systems Analyses.
AD-904 407/4 1378

DECISION THEORY
A Manual for Encoding Probability Distributions.
AD-A092 259/1 1378

Decision Flexibility in a Learning Environment.
AD-A092 498/5 1309

Game Theory, Decision Theory, and Social Choice Theory in the Context of a New Theory of Equity.
AD-A092 499/3 1378

DECOMPOSITION
Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
AD-A092 497/7 1335

DECONTAMINATION MATERIALS
Survey of Decontamination Methods related to Field Decontamination of Vehicles and Materiel (Abridged).
AD-B031 659/6 1399

DEEP OCEAN VEHICLES
Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855082 1393

DEEP WATER
Reprint: Anomalous Water in the Deep Ocean Suggests Lateral Advection-Stirring.
AD-A092 000/9 1348

DEER
Wildlife Research Report. Part One.
PB81-124638 1384

DEFECTS (MATERIALS)
Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

DEFENSE PLANNING
Defense Planning and Arms Control. Proceedings of a Special NSAI Conference, 12-14 June 1980, National Defense University, Washington, DC.
AD-A092 168/4 1400

Department of Defense In-House RDT&E Activities.
AD-A092 321/9 1296

DEFLAGRATION
An Experimental Study of Solid Propellant Deflagration Using High Speed Motion Pictures and Postfire Residue Analysis.
AD-A092 423/3 1456

DEGRADATION
Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324

DEHYDRATION
Reprint: Instrument for Determining Depth of Dehydration of Frozen Fish,
PB81-120727 1323

DEHYDROGENASES
Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

DEICERS
Highway Operation and Plant Damage.
PB81-133159 1367

DELIVERY OF HEALTH CARE
Policies on Dental Health and Health Planning.
HRP-0902632/9 1320

DELPHI TECHNIQUE
The Delphi Technique and ITS Applicability to Army Systems Analyses.
AD-904 407/4 1378

DELTA MODULATION
Reprint: An Approach to Programmable CTD Filters Using Coefficients 0, + 1, and -1.
AD-A091 877/1 1358

DEMODULATORS
Demodulators. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851289 1361

Demodulators. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851297 1361

Demodulators. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851305 1361

Modulators
Testing of 19.2 KB/S MODEM.
AD-894 759/0 1360

DENDRITIC WEB GROWTH METHOD
Silicon Web Process Development.
DOE/JPL/954654-80/12 1331

DENSITOMETERS
Densitometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851248 1397

Densitometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851255 1397

Densitometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851263 1397

Densitometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851271 1397

DENSITY
Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
AD-A092 337/5 1334

DENTAL CARE
Policies on Dental Health and Health Planning.
HRP-0902632/9 1320

DENTAL CARIES
Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
PB81-122962 1320

DENTISTRY
Summaries of Research, Fiscal Year 1980.
AD-A092 232/8 1318

Reprint: Influence of Interdental Contacts on Periodontal Status.
AD-A092 425/8 1319

DEPARTMENT OF DEFENSE
Integrated Logistic Support. Implementation Guide for DoD Systems and Equipments.
AD-A092 167/6 1401

DESALTING
Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1365

DESIGN CRITERIA
Corps of Engineers Hydraulic Design Criteria. Volume I.

AD-A092 237/7 1382

DESULFURIZATION
Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381

DETECTORS
Multi-Sensor Detection Study.
AD-A091 954/8 1358

Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450

Reprint: Memoryless Quantizer-Detectors for Constant Signals in m-Dependent Noise.
AD-A092 123/9 1358

Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357

Production Rule Systems as an Approach to Interpretation of Ground Sensor Information.
AD-A092 282/3 1355

DETERGENTS
Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
PAT-APPL-6-181 465 1332

DETERRENCE
Reflexive Launch Strategies.
AD-A092 300/3 1400

DETONATING CORD
A Characterization Study of Several Heat Resistant Explosives in Mild Detonating Cords.
AD-B015 229/8 1433

DETONATORS
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432

DEUTERIUM TARGET
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442

Elastic Pd and Quasifree A(p, Nd)B Scattering at Intermediate Energies.
JINR-E-2-12369 1445

DIAGNOSIS (GENERAL)
One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
AD-A092 189/0 1333

DIAGNOSIS (MEDICINE)
Reprint: Lack of Diagnostic Utility of Febrile Agglutinin Screens.
AD-A092 085/0 1318

DIAGNOSTIC AGENTS
Toluidine Blue Rinse for the Detection of Squamous Carcinoma of the Oral Cavity and Other Structures Composition and Method.
PAT-APPL-6-105 079 1325

DIAGNOSTIC EQUIPMENT
Contrast Resolution Tissue-Equivalent Ultrasound Test Object.
PAT-APPL-6-186 381 1324

DIATOMIC MOLECULES
Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333

Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334

DIE FORGING
Hot Stamping. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855330 1391

DIELECTRIC TRACK DETECTORS
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

DIELECTRICS
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352

DIESEL FUELS
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

DIFFERENTIAL CROSS SECTIONS
Induced Isospin Mixing in Direct Nuclear Reactions.
Juel-Spez-47 1445

DIFFERENTIAL EQUATIONS
Analytic Methods for the Approximate Solution of Singularly Perturbed Systems.
AD-A091 907/6 1375

Attractivity Properties of alpha-Contractions.
AD-A091 975/3 1375

Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

One-Leg Formulas for Stiff Differential Equations.
COO-2383-0070 1357

DIFFUSERS
Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455

DIFFUSION
Interdiffusion of Metals and Semiconductors.
AD-A091 961/3 1450

Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385

DIFFUSION THEORY
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332

DIFFUSION WELDING
Vacuum Diffusion Welding. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851685 1390

DIGITAL COMPUTERS
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

Air Force operations
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409

DIGITAL FILTERS
Hardware Realizations for Digital Signal Processing.
AD-A091 904/3 1359

Reprint: Optimal Design of FIR Digital Filters with Monotone Passband Response.
AD-A092 124/7 1359

Reprint: A Note on Variable Recursive Digital Filters.
AD-A092 131/2 1359

DIGITAL RECORDING SYSTEMS
Reading machines
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

DIGITAL SYSTEMS
Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354

Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354

Architecture for Higher Level Digital Image Processing.
AD-A092 153/6 1355

Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358

Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

Reprint: A Digital Image System for Atmospheric Research.
AD-A092 489/4 1356

Efficient Design of Two-Dimensional Recursive Digital Filters. Final Report.
UCID-18819 1361

DIMENSIONAL COORDINATION
Dimensional Co-ordination in Building (Comhordu Toiseach.san bhFoirgniocht).
PB81-122509 1394

DIMETHYL HYDRAZINE (1-1)
Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
AD-A092 249/2 1328

DIPHTHERIA TOXIN
Reprint: Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine.
AD-A091 900/1 1317

DIRECT ENERGY CONVERTERS
Technology of Direct Conversion for Mirror Reactor End-Loss Plasma.
UCRL-84235 1419

DIRECTION FINDING
Radio Direction Finding on High Frequency Short Duration Signals.
AD-A092 136/1 1410

Implementation of the Phase Difference Trace Function for a Circular Array.
AD-A092 195/7 1407

An Investigation of HF Direction-Finding Accuracy on the Churchill-Ottawa Auroral Zone Path.
AD-A092 311/0 1410

An Investigation of HF Direction-Finding Accuracy on the Frobisher Bay-Ottawa Auroral Zone Path.
AD-A092 312/8 1410

Long Range Listening System.
PATENT-4 223 311 1410

DIRECTORIES
A Congeries of Numerical Models used at the BRL.
AD-A091 886/2 1434

Data Bases Available at the National Bureau of Standards Library,
PB81-132870 1299

DISADVANTAGED GROUPS
Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321

DISASTERS
A Coordination, Education, and Mitigation Model for Disaster Preparedness in Coastal Areas.
AD-A092 173/4 1309

Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349

The Lubbock, Texas, Tornado May 11, 1970. A Report to the Administrator.
PB81-137788 1295

Arizona Floods of September 5 and 6, 1970. A Report to the Administrator.
PB81-138067 1394

DISCRIMINATE ANALYSIS
Distributions of Some Matrix Variates and Latent Roots in Multivariate Behrens-Fisher Discriminant Analysis.
AD-A091 960/5 1375

Reprint: The Effect of Errors in Diagnosis and Measurement on the Estimation of the Probability of an Event.
AD-A092 430/8 1377

DISCRIMINATORS
Integrated circuits
Thin Film Hybrid Pulse Width Discriminator Circuit Fabrication.
AD-900 343/5 1360

DISEASES
Reprint: Further Remarks on the Mechanism Producing the Symptoms of Meniere's Disease.
AD-A092 046/2 1317

DISINFECTION
Disinfection of Viruses in Water by Ozone.
AD-A092 252/6 1318

DISK RECORDING SYSTEMS
Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
AD-A091 957/1 1353

Concepts for Utilization of Video Discs in Military Applications.
AD-A092 029/8 1398

DISKS
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332

DISPLACEMENT TRANSDUCERS
A New Angular Displacement Transducer.
AD-C019 184/1 1396

DISPLAY SYSTEMS
Consolidated Car Display: A Summary Report of the Process and the Results of the Consolidation of Critical and Supplementary Terminal Area Air Traffic Control Information for Display Presentation.
AD-A092 450/6 1412

Avionics
RF-4C Digital Signal Transfer Unit Multisensor Display System (DSTUMDS).
AD-B010 501/5 1435

Modular construction
Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
AD-B004 191/3 1290

DISPOSAL
Control, Decontamination and Disposal of Mercury.
AD-A092 453/0 1328

DISSOLVERS
Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

DISTRIBUTED DATA PROCESSING
Network Management Research.
AD-A092 055/3 1407

Detailed Design of the Kernel of a Real-Time Multiprocessor Operating System.
AD-A092 301/1 1356

DISTRIBUTION
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290

DISTRIBUTION SYSTEMS
Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
PB81-130676 1386

DISTURBANCE ANALYSIS AND SURVEILLANCE SYSTEMS
A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
NUREG/CR-1761 1422

DIVER EQUIPMENT
MK 11 and MK 12 CO2 Scrubber Development.

AD-A092 314/4 1323

DOLOMITE
Assessment of Potential Radionuclide Transport in Site-Specific Geologic Formations.
SAND-79-2468 1425

DOPPLER EFFECT
Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406

Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

DOPPLER NAVIGATION
Far infrared radiation
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

DOPPLER RADAR
Evaluation of a Meteorological Airborne Pulse Doppler Radar.
AD-A092 276/5 1412

Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
AD-A092 318/5 1413

Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295

Reprint: Long-Term Measurements in C2n in the Boundary Layer.
AD-A092 427/4 1295

Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295

DOSE RATES
External Dosimetry.
DOE/TIC-11273 1327

DOSEMETERS
Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
AECL-6206 1327

DOSIMETERS
Radiac Ratemeter Calibration Accuracy.
AD-A092 271/6 1421

DOSIMETRY
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326

Operation PLUMBBOB. Project 2.9. Nuclear Radiation Received by Aircrews Firing the MB-1 Rocket.
AD-B951 740/0 1327

Operation PLUMBBOB. Project 39.1b. Neutron Dosimetry by the Threshold-Detector Technique.
AD-B951 741/8 1327

DRAG
An Investigation of Appendage Drag.
AD-A092 353/2 1392

DRAG REDUCTION
P-3 Orion Fuel-Saving Modification Wind Tunnel Study.
AD-A091 906/8 1288

DRAINAGE
Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387

DRILLING MACHINES
Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
AD-A092 365/6 1391

DRINKING WATER
Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329

DRIVE SHAFTS
Application of Numerical Optimization to Drive Shaft Design.
AD-A092 400/1 1391

DRIVERS (PERSONNEL)
Preliminary Outline of Driver Duties and Tasks for US/FRG MBT-70.
AD-A950 103/2 1434

DRUG ABUSE
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
AD-A092 155/1 1309

An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
AD-A092 203/9 1309

DRUGS
Reprint: Ketoconazole in Early and Late Murine Coccidioidomycosis.
AD-A091 921/7 1317

Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325

Interaction of Drugs in the Hyperbaric Environment, Bethesda, Maryland, 13-14 September 1979. The Undersea Medical Workshop (21st),
AD-A092 451/4 1328

Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331

Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325

Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 594 1325

N-Acetyl-Cysteine Protects Against Cardiac Damage from Subsequently-Administered Cardio-Toxic Anthracycline in Cancer Therapy.
PAT-APPL-6-190 064 1326

Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332

Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
PB81-124687 1320

GC/MS Assays for Abused Drugs in Body Fluids,
PB81-133746 1326

DRY BEDS
Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
PB81-124158 1384

DRYING
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375

DRYING APPARATUS
Laundry Heat Recovery, USMA, West Point.
AD-A092 060/3 1378

DUNES
Experimental Dune Restoration and Stabilization, Nauset Beach, Cape Cod, Massachusetts.
AD-A092 110/6 1340

DUST EXPLOSIONS
The Investigation of Grain Elevator Explosions.
PB81-123549 1291

DUTCH
A Guide to Dutch Manuscripts Relating to New Netherland in United States Repositories,
ED-183 170 1296

DYE LASERS
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334

DYES
UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385

DYNAMIC RESPONSE
Modal Analysis for Aircraft Response to Runway Surface Roughness.
AD-A092 057/9 1290

DYNAMIC STRUCTURAL ANALYSIS
3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program,
PB81-123242 1449

DYNAMIC TESTS
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449

DYSPROSIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

DYSPROSIUM 164 TARGET
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

EAR PROTECTORS
The Effects of Earplugs and Earmuffs on Pitch Discrimination in Noise.
AD-B039 142/5 1326

EARLY WARNING SYSTEMS
Independent Evaluation Report for Platoon Early Warning System (PEWS-IER) AN/TRS-2( ).
AD-B023 039/1 1400

Search radar
Modifications to Devenco Model PPS-3A Radar Fence.
AD-885 234/5 1413

EARNINGS
The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
PB81-126732 1307

Profit Performance. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851727 1301

EARTH DAMS
National Dam Safety Program. Nanticoke Creek Watershed Project Site 10 Dam (Inventory I.D. Number NY 713, DEC 85D-3946, Susquehanna River Basin, Broome County, New York, Phase I Inspection Report,
AD-A092 036/3 1380

National Dam Safety Program, Browns Reservoir Dam (Inventory Number ID NY-763, DEC Number 232 BE-4361), Long Island Basin, Westchester County, New York. Phase I Inspection Report,
AD-A092 037/1 1380

National Dam Safety Program. Morgan Lake Dam (Inventory Number NY-787), Hudson River Basin, Dutchess County, New York. Phase I Inspection Reprot,
AD-A092 039/7 1381

National Dam Safety Program. Lookover Lake Dam (NJ00565), Hudson River Basin, Longhouse Brook, Passaic, County, New Jersey. Phase I Inspection Report.
AD-A092 218/7 1381

National Dam Safety Program. Lake Suzanne (Inventory Number N.Y. 760) Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 220/3 1382

National Dam Safety Program. Harrower Pond Dam (Inventory Number NY207), Mohawk River Basin, Montgomery County, New York. Phase I Inspection Report,
AD-A092 227/8 1382

National Dam Safety Program. Patterson, Brixius, Grey Creek Watershed Project, Site 1 (Inventory Number NY698), Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 296/3 1382

National Dam Safety Program. Patterson Brixius Grey Creek Watershed Project, Site 2 (Inventory Number NY 725). Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 452/2 1382

Full-Scale Experimental Investigation of a Modern Earth Dam,
PB81-123788 1384

EARTHQUAKE ENGINEERING
Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons,
PB81-120032 1350

Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
PB81-120065 1350

A Response Spectrum Method for Random Vibrations,
PB81-122301 1394

3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program,
PB81-123242 1449

Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395

EARTHQUAKES
Relationship between Ms and mb for Small Earthquakes in Uzbekistan, USSR.
AD-A091 984/5 1349

Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349

Risk and Public Policy.
PB81-120057 1394

Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980,
PB81-120081 1350

Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
PB81-122533 1393

Seismic Stability Evaluation of Earth Structures.
PB81-123069 1351

Full-Scale Experimental Investigation of a Modern Earth Dam,
PB81-123788 1384

Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
PB81-124000 1384

General Applicability of a Nonlinear Model of a One Story Steel Frame,
PB81-124877 1395

Cyclic Inelastic Buckling of Tubular Steel Braces,
PB81-124885 1395

EARTHWORK
Seismic Stability Evaluation of Earth Structures.
PB81-123069 1351

EAST GERMANY
Brotherhood-in-Arms East German Foreign Policy in Africa 'Kalashnikoffs, not Coca Cola Bring Self-Determination to Angola' Volksarme, 1978.

KEYWORD INDEX

AD-A092 402/7 1302

ECCS
Experimental Determination of Lower Plenum ECC Injection Effectiveness.
CONF-801102-12 1427

ECOLOGY
Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
PB81-132052 1323

Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340

ECONOMIC ANALYSIS
The Detailed Input-Output Structure of the U.S. Economy: 1972. Volume II. Total Requirements for Commodities and Industries, 1972. Part I. Commodity-by-Commodity Total Requirements, 1972. Part II. Industry-by-Commodity Total Requirements, 1972.
PB81-120149 1300

ECONOMIC DEVELOPMENT
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
PB81-125619 1303

Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica,
PB81-125775 1291

CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
PB81-126039 1300

CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
PB81-126047 1300

ECONOMIC MODELS
Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
PB81-139305 1301

ECONOMIC WARFARE
Economic Sanctions in the 1990's,
AD-A092 201/3 1302

ECONOMICALLY DISADVANTAGED
On-Site Library Training Program for School and Community in an Economically and Culturally Deprived County.
ED-183 162 1298

ECR HEATING
Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415

Currents Induced in Tokamaks by Electron Cyclotron Heating.
ORNL/TM-7503 1418

Mode Converter for Electron Cyclotron Resonance Heating of Toroidal Plasmas.
PPPL-1697 1418

EDDIES
Reprint: Recent Observations of a Large Eddy in the Gulf of Alaska,
PB81-120719 1342

EDDIES (OCEAN CURRENTS)
Reprint: Eddies Off the Somali Coast During the Southwest Monsoon.
AD-A092 324/3 1341

EDDY CURRENTS
Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342

EDITING
Design and Implementation of an Integrated Screen-Oriented Text Editing and Formatting System.
AD-A092 180/9 1297

EDUCATION
Professional Continuing Education. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851701 1307

Educational Level Projections. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851891 1307

EDUCATIONAL GAMES
Instructional Games and the Computer-Using Teacher. The Illinois Series on Educational Application of Computers, No. 9e,
ED-183 189 1306

EDUCATIONAL RESOURCES
Getting Started in School Computing: Preparing to Purchase. The Illinois Series on Educational Application of Computers, No. 14e,
ED-183 192 1306

EIGENVALUES
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376

EINSTEIN FIELD EQUATIONS
Tetrads of Observers and Einstein's Equations.
KFKI-1979-65 1449

EINSTEINIUM COMPOUNDS
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

EJECTION SEATS
Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
AD-A092 292/2 1288

ELASTIC WAVES
Effective Shear Modulus for Flexural and Extensional Waves in an Unloaded Thick Plate.
AD-A092 149/4 1449

ELDERLY PERSONS
Housing Needs of the Rural Elderly and Handicapped.
PB81-139446 1314

The Elderly: Social, Health, and Transportation Problems and Services. 1976-August, 1979 (Citations from the NTIS Data Base).
PB81-801573 1315

The Elderly: Social, Health, and Transportation Problems and Services. September, 1979-December, 1980 (Citations from the NTIS Data Base).
PB81-801581 1315

ELECTRIC ARCS
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

ELECTRIC BATTERIES
Review of Thermally Regenerative Electrochemical Systems. Volume I. Synopsis and Executive Summary.
SERI/TR-332-416(V.1) 1366

ELECTRIC BUSES
The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
PB81-120172 1388

ELECTRIC CABLES
Pulse cables
Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
AD-B000 632/0 1409

ELECTRIC CHARGE
Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456

Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338

ELECTRIC CONNECTORS
Connector-to-Connector Adaptor.
PATENT-4 218 110 1352

ELECTRIC CONTACTS
Power FET Contact Technology.
AD-A092 320/1 1351

ELECTRIC CORONA
Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338

ELECTRIC CURRENT
Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 878/9 1292

Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332

ELECTRIC DISCHARGES
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447

Study of Gas Dynamic Effects in Non-Uniform High Pressure Electrical Discharges.
AD-A092 413/4 1437

Studies of Transient Discharges.
AD-A092 482/9 1437

ELECTRIC GUNS
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

ELECTRIC MOTORS
Stepper Motors. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855132 1358

ELECTRIC POWER
Power Circuit Utilizing Self Excited Hall Effect Switch Means.
PAT-APPL-6-189 237 1361

ELECTRIC POWER DISTRIBUTION
Interactive Mine-Power-System Analysis--APL Fault Program.
PB81-130858 1348

ELECTRIC POWER PLANTS
Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies,
NUREG/CR-1299 1337

ELECTRIC SWITCHES
Clutch Protection Circuit.
PATENT-4 227 232 1361

ELECTRIC UTILITIES
Operational Analysis of Open-Cycle MHD. Final Report.
EPRI-AP-1463 1366

ELECTRIC VEHICLES
The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
PB81-120172 1388

ELECTRICAL INSULATION
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352

ELECTRICAL LASERS
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

ELECTROCHEMICAL CELLS
Review of Thermally Regenerative Electrochemical Systems. Volume I. Synopsis and Executive Summary.
SERI/TR-332-416(V.1) 1366

ELECTROCHEMISTRY
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332

On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335

ELECTRODEPOSITION
Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

ELECTRODES
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332

On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

ELECTROLESS PLATING
Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368

ELECTROMAGNETIC FIELDS
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

ELECTROMAGNETIC ISOTOPE SEPARATION
Helium-Jet Coupled Mass Separator: Advances and Directions.
CONF-800870-1 1420

ELECTROMAGNETIC ISOTOPE SEPARATORS
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420

ELECTROMAGNETIC PULSE SIMULATORS
Analysis of a Simulated Source of Electromagnetic Pulses.
AD-A092 440/7 1452

Upgrading the AURORA Simulator.
AD-A092 501/6 1452

ELECTROMAGNETIC PULSES
A Near-Surface Burst EMP Driver Package for Neutron-Induced Sources.
AD-A091 908/4 1421

ELECTROMAGNETIC RADIATION
Evaluation of Time Domain EM Coupling Techniques. Volume I.
AD-A092 031/4 1452

Evaluation of Time Domain EM Coupling Techniques. Volume II.
AD-A092 032/2 1452

Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

Propagation
Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
AD-912 791/1 1360

ELECTROMAGNETIC SCATTERING
Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
AD-A091 980/3 1293

Discrete Scattering Approach to Vegetation Modeling.
AD-A092 017/3 1452

Concept Evaluation: Field Feedback Computation of Electromagnetic Scattering.
AD-A092 305/2 1452

ELECTROMAGNETIC WAVE PROPAGATION
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,

AD-A091 933/2 1359

Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452

Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293

Analysis of a Simulated Source of Electromagnetic Pulses.
AD-A092 440/7 1452

ELECTRON BEAMS

Power FET Contact Technology.
AD-A092 320/1 1351

Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(Rev.1) 1441

Reprint: Calculations of Electron Beam Spreading in Composite Thin Foil Targets,
PB81-126070 1338

Parity Violation in Polarized Electron Scattering.
SLAC-PUB-2619 1447

ELECTRON DENSITY

Comparison of Electron Densities in the Middle Atmosphere Indicated by Rocket Borne Probing Techniques.
AD-A092 503/2 1294

ELECTRON DIFFRACTION

Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

ELECTRON EMISSION

Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334

ELECTRON-ION COLLISIONS

Oak Ridge National Lab., Tennessee.
DOE/TIC-11285 1337

ELECTRON MICROSCOPY

Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

ELECTRON MOBILITY

Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450

ELECTRON-POSITRON INTERACTIONS

Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446

Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446

ELECTRON SOURCES

High Intensity Polarized Electron Sources.
SLAC-PUB-2621 1441

ELECTRON SPECTROSCOPY

Deep Level Transient Spectroscopy as an Experimental Technique.
AD-A091 941/5 1449

Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

ELECTRON TRANSFER

Chemically Initiated Electron-Exchange Luminescence.
AD-A092 355/7 1334

On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334

Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315

ELECTRON TRANSITIONS

Investigation of Plasma Processes in Electronic Transition Lasers.
AD-A091 903/5 1439

ELECTRONIC COUNTER COUNTERMEASURES

Integrated Coding and Waveform Design Study.
AD-A091 985/2 1410

ELECTRONIC COUNTERMEASURES

Multi-Tone Jammer.
PAT-APPL-6-181 940 1410

A Netted Search Radar System.
PAT-APPL-6-185 469 1413

ELECTRONIC SWITCHES

Power Circuit Utilizing Self Excited Hall Effect Switch Means.
PAT-APPL-6-189 237 1361

Transistors

Modulator Driver Transistor.
AD-917 847/6 1352

ELECTRONS

Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363

ELECTROSTATIC CHARGE

Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437

ELECTROSTATIC FIELDS

Launch vehicles

Titan Vehicle Electrostatic Environment.
AD-913 898/3 1457

ELECTROSTATIC GENERATORS

Variable Capacitance Electrostatic Energy Conversion System.
AD-B014 349/5 1363

ELECTROSTATIC PRECIPITATORS

Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338

ELECTROSTATICS

Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437

ELEMENTARY PARTICLES

Theoretical Particle Physics. Progress Report, December 1, 1079-November 30, 1980.
DOE/ER/02009-140 1443

ELLIPTIC EQUATION

Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289

ELMO BUMPY TORUS

Configurational Analysis of an EBT Reactor in Various Magnetic Geometries.
CONF-801011-10 1414

One-Dimensional Model Calculations of EBT-P Performance.
DOE/ER/53092-T1 1415

Wave Heating Models for Ion-Cyclotron Heating in EBT-S.
DOE/ER/53092-T2 1415

Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415

Magnetic Fusion Experiments at Oak Ridge National Laboratory (ORNL).
DOE/TIC-11281 1416

EMANOMETERS

Residential Radon Daughter Monitor Based on alpha Spectroscopy.
LBL-10768 1422

EMISSION

Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456

EMISSION SPECTRA

Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447

EMPLOYMENT

EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300

A Demographic Profile of Minimum Wage Workers, Working Paper Number 4,
PB81-123713 1307

EMULSIONS

Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325

ENAMELS

Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate CaHPO4.2H2O Formation,
PB81-126088 1320

ENCAPSULATING

Encapsulation of Electronic Circuits. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855298 1391

ENDANGERED SPECIES

Threatened and Endangered Fish and Wildlife of the Midwest.
ANL/EES-TM-101 1316

Peregrine Falcon Study. Final Report.
SAN-2068-1 1388

ENDOTOXEMIA

Reprint: Experimental Endotoxin Shock: The Pathophysiologic Function of Endorphins and Treatment with Opiate Antagonists.
AD-A091 919/1 1317

ENDOTOXIC SHOCK

Reprint: Experimental Endotoxin Shock: The Pathophysiologic Function of Endorphins and Treatment with Opiate Antagonists.
AD-A091 919/1 1317

ENDURANCE (PHYSIOLOGY)

Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327

ENERGETIC PROPERTIES

A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
AD-A092 148/6 1456

ENERGY

Energy in the '80S: Decade of Decision.
CONF-800212- 1362

ENERGY CONSERVATION

Local Energy Monitoring and Control Analysis.
AD-A091 929/0 1378

Laundry Heat Recovery, USMA, West Point.
AD-A092 060/3 1378

Warmtebesparing door Isolatie en Stookwijze Bereikt in Twee Woningen-Woning II (Heat Savings by Insulation and Usage of the Heating System Achieved in Two Houses),
PB81-125197 1363

Research on Energy Conservation for Cars and Goods Vehicles,
PB81-129090 1363

ENERGY CONVERSION

Reprint: Analysis of Gas Dissociation Solar Thermal Power System.
AD-A091 982/9 1363

Variable Capacitance Electrostatic Energy Conversion System.
AD-B014 349/5 1363

ENERGY DEMAND

Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
PB81-142192 1387

ENERGY FORECASTING

Systems Analysis Applied to Energy Forecasting. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-850984 1363

ENERGY LINK PROJECT

The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
PB81-122988 1299

National Resource Center Operational Feasibility and Use Study, Volume 1,
PB81-125304 1299

National Resource Center Operational Feasibility and Use Study, Volume 2, Appendix D,
PB81-125312 1299

ENERGY MANAGEMENT

Local Energy Monitoring and Control Analysis.
AD-A091 929/0 1378

ENERGY POLICY

Energy in the '80S: Decade of Decision.
CONF-800212- 1362

ENERGY SHORTAGES

Energy Emergency Contingency Plan.
PB81-128704 1363

ENERGY STORAGE

Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361

ENERGY SUPPLIES

Systems Analysis Applied to Energy Forecasting. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-850984 1363

ENERGY TRANSFER

Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439

ENERGY USE

The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
PB81-122988 1299

ENGINE FUEL SYSTEMS COMPONENTS

Fuel Valve.
PAT-APPL-6-187 646 1455

ENGINE NACELLES

P-3 Orion Fuel-Saving Modification Wind Tunnel Study,
AD-A091 906/8 1288

ENGINE VALVES

Flow-Closing Bleed Valve Assembly.
PAT-APPL-6-171 611 1455

ENGINEERING

Engineering Information Systems. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855348 1299

ENHANCED RECOVERY

Contracts for Field Projects and Supporting Research on Enhanced Oil Recovery and Improved Drilling Technology.
DOE/BETC-80/3 1344

ENLISTED PERSONNEL

Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.

KEYWORD INDEX

AD-A092 275/7 1304

ENTRAINMENT
Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant,
PB81-130049 1322

ENTROPY
A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358

Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts,
PB81-126161 1338

ENVIRONMENT
Annual Progress Report, July 1, 1979-June 30, 1980.
UCLA-12-1253 1322

ENVIRONMENTAL ASSESSMENT DATA SYSTEMS
Environmental Assessment Data Systems User Guide: Project Profile System.
PB81-125625 1299

ENVIRONMENTAL FACTORS
Health Planning Related to Environmental Factors. Volume II: Foodborne and Waterborne Intestinal Illnesses Module,
HRP-0902233/6 1319

Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text,
HRP-0902234/4 1320

ENVIRONMENTAL IMPACT STATEMENTS-DRAFT
Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area.
PB81-132151 1386

Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area. Appendices.
PB81-132169 1386

ENVIRONMENTAL IMPACT STATEMENTS-FINAL
Modesto Wastewater Facilities Improvements.
PB81-130502 1386

ENVIRONMENTAL IMPACTS
Motor Vehicles and the Environment: Reply to UNEP (United Nations Environment Programme) Questionnaire.
PB81-130437 1389

ENVIRONMENTAL SURVEYS
Environmental Assessment Data Systems User Guide: Project Profile System.
PB81-125625 1299

Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322

Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

ENVIRONMENTAL TESTS
The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
AD-A091 887/0 1373

The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
AD-A092 105/6 1373

ENVIRONMENTAL TRANSPORT
Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
AECL-6206 1327

ENZYME INHIBITORS
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338

ENZYMES
Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

EPA REGION 5
Region V's Guidance for Developing a State Malfunction Notification and Correction Program,
PB81-125601 1384

EPITAXIAL GROWTH
Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

EPOXY COMPOUNDS
Perfluorinated Epoxides.
PAT-APPL-6-182 563 1374

EQUAL EMPLOYMENT OPPORTUNITY
EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300

EQUATIONS OF MOTION
Reprint: Some Comments on the Energy Method.
AD-A091 944/9 1438

Reprint: The Second Painleve Transcendent: A Nonlinear Airy Function.
AD-A092 052/0 1375

EQUIVALENT CIRCUITS
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
AD-A091 933/2 1359

ERBIUM 166 TARGET
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

ERBIUM 168 TARGET
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

EROSION
Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.
AD-A092 344/1 1435

Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436

Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

EROSION CONTROL
Erosion Control Product Testing Using Rainfall Simulation.
PB81-132995 1386

ERROR ANALYSIS
Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
AD-A092 395/3 1408

Reprint: The Effect of Errors in Diagnosis and Measurement on the Estimation of the Probability of an Event.
AD-A092 430/8 1377

Error Analysis of Ruby Radar Cross Section Measurement System.
AD-A950 100/8 1413

ERROR CORRECTION CODES
Integrated Coding and Waveform Design Study.
AD-A091 985/2 1410

ERRORS
Errors in Human Performance.
AD-A091 925/8 1308

Reprint: Threshold Effect on Error Probability in QAM Systems.
AD-A092 122/1 1408

ESTERS
Chemiluminescence of Secondary Peroxyesters.
AD-A092 322/7 1334

ESTIMATES
A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358

On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377

ETA MESONS
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446

ETHANE
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

ETHIONINE
Study of the Mechanism of Carcinogenesis by Carcinogens Which Are Negative in the Ames Test. Progress Report.
DOE/EV/10100-02 1328

ETHNIC GROUPS
Evaluation of HEW - Assisted Programs to the Hispanic Population of Clark County, Nevada.
PB81-125726 1309

EUGENOL
A Comparison of the Inflammatory Response Produced by Commercial Eugenol and Purified Eugenol,
AD-A091 901/9 1325

EUROPIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

EVOLUTION (BIOLOGY)
Reprint: Planktonic Microfossils and the Recognition of Ancestors.
AD-A092 508/1 1342

EXCAVATION
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380

EXCIMERS
Investigation of Plasma Processes in Electronic Transition Lasers.
AD-A091 903/5 1439

EXCITATION
Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
AD-A092 336/7 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
AD-A092 337/5 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
AD-A092 338/3 1334

Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335

EXCITONS
Theory of Core Excitons.
DOE/ER/01198-1323 1450

EXERCISE (PHYSIOLOGY)
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 288/0 1327

The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets,
AD-A092 359/9 1324

Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327

EXHAUST EMISSIONS
The Effects of Emission Control System Malfunctions or Maladjustments on Exhaust Emissions.
PB81-122004 1389

Comparison of Gas Phase Hydrocarbon Emissions from Light-Duty Gasoline Vehicles and Light-Duty Vehicles Equipped with Diesel Engines.
PB81-122996 1389

Results of Sulfate Tests on Prototype Vehicles.
PB81-123028 1389

Testing Support for Evaluation of Inspection/Maintenance Issues (Test Group Nos. 6 and 8).
PB81-123499 1389

EXHAUST GASES
Exhaust Emission Characteristics and Variability for Maintained General Electric CF6-50 Turbofan Engines.
AD-A092 291/4 1455

Environmental Impacts of the Satellite Power System (SPS) On the Middle Atmosphere.
DOE/ER/10035-01 1383

EXHAUST PLUMES
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

EXPANSIVE CLAYS
Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388

EXPERIMENTAL DESIGN
MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.
AD-A092 266/6 1304

MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan,
AD-A092 267/4 1304

EXPLOSION EFFECTS
Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
AD-A091 978/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435

EXPLOSIVE ORDNANCE DISPOSAL
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433

EXPLOSIVES
A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
AD-A092 148/6 1456

A Characterization Study of Several Heat Resistant Explosives in Mild Detonating Cords.
AD-B015 229/8 1433

Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433

Taggants with Explosive Induced Magnetic Susceptibility.

PAT-APPL-6-181 924 1433

Heat resistant materials
A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432

EXPLOSIVES DETECTION
Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433

EXTERIOR BALLISTICS
Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433

Results from Trials of a New Yawsonde Design.
PB81-120222 1434

EXTERNAL STORES
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288

Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

EXTRACTION APPARATUSES
Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

EXTRACTIVE METALLURGY
Extractive Metallurgy. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851313 1372

Extractive Metallurgy. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851321 1372

Extractive Metallurgy. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851339 1372

EXTRATERRESTRIAL ATMOSPHERES
Extraterrestrial Atmospheres. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851198 1292

EXTREME VALUE DENSITY FUNCTIONS
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
AD-A092 163/5 1375

F-2030 RESONANCES
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446

Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446

F REGION
Reprint: Airborne Studies of Equatorial F Layer Ionospheric Irregularities.
AD-A092 006/6 1293

Reprint: Seasonal and Solar Cycle Variations of Equatorial Spread-F in the American Zone.
AD-A092 083/5 1293

FABRICATION
HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450

FACSIMILE TRANSMISSION
Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
AD-A092 395/3 1408

FACTOR ANALYSIS
Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383

FAILURE
Failure Rates for Fiber Optic Assemblies.
AD-A092 315/1 1440

Application of Statistical Fracture Criteria to the Problem of Predicting Infrared Dome Thermal Shock Failures.
AD-B028 668/2 1411

FAIR LABOR STANDARDS ACT
The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
PB81-126732 1307

Exemptions to the Fair Labor Standards Act - Transportation Sector.
PB81-127441 1307

The Overtime Pay Provisions of the Fair Labor Standards Act,
PB81-132243 1300

FALLING SPHERE PROJECT
Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
AD-A092 111/4 1359

FALLOUT
Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1,
AD-B951 736/8 1426

FANS (MARINE)
Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348

FAR INFRARED RADIATION
Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450

FARM CROPS
A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291

Examination of Farmer-Reported Acreages.
PB81-130874 1291

FARMERS LUNG
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

FARMS
Examination of Farmer-Reported Acreages.
PB81-130874 1291

Structure and Adjustments of the Farming Sector: A Data Base by Regions.
PB81-137705 1291

FATIGUE (MECHANICS)
Fatigue in Graphite/Epoxy Bolted Joints.
AD-A092 362/3 1388

FATIGUE TESTS (MECHANICS)
Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
AD-A092 473/8 1370

Reprint: Modification of the Hillig-Charles Theory for Static Fatigue of Glass.
AD-A092 492/8 1367

FAULT TOLERANT COMPUTING
POSER - A Process Organisation to Simplify Error Recovery,
AD-A092 103/1 1354

FEDERAL ASSISTANCE PROGRAMS
Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
PB81-139305 1301

FEDERAL RAILROAD ADMINISTRATION
Study of Liability, Insurance and Indemnification Problems for FRA Programs.
PB81-124521 1300

FEMINISM
An Inventory to the Records of the 1977 South Carolina International Women's Year Conference.
ED-183 154 1298

FERROMAGNETIC MATERIALS
Nonlinear Processes of Magnons in Insulating Ferromagnetic Materials.
INIS-mf-5641 1451

Magnetic Excitations in Amorphous Ferromagnets.
INIS-mf-5654 1451

FERTILIZERS
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291

FEVERS
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

FFTF REACTOR
Experience with Simplified Inelastic Analysis of Piping Designed for Elevated Temperature Service.
HEDL-SA-1933 1428

Seismic Transient Analysis of a Containment Vessel with Penetrations.
HEDL-SA-1955 1428

Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428

Seismic Analysis of Piping with Nonlinear Supports.
HEDL-SA-1994-FP 1428

FIBER OPTICS
Laser Light Fiber Communication--Translation.
AD-A092 096/7 1407

Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

Failure Rates for Fiber Optic Assemblies.
AD-A092 315/1 1440

Gallium arsenide lasers
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439

FIBER OPTICS TRANSMISSION LINES
Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

Avionics
Optical Couplers.
AD-B009 489/6 1440

FIBER REINFORCED COMPOSITES
Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368

FIBERBOARD
Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388

FIBERS
Improving the Removal of Lint from Cottonseed.
PAT-APPL-6-180 542 1390

FIELD EFFECT TRANSISTORS
Power FET Contact Technology.
AD-A092 320/1 1351

FIELD-REVERSED MIRROR REACTORS
Design Considerations for a Steady State Fusion Reactor's Thermal Energy Dump (TED) With Emphasis on SAFFIRE.
COO-2218-182 1415

Field-Reversed Mirror Pilot Reactor. Annual Report.
EPRI-AP-1544 1416

FIELD TESTS
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412

FILM COOLING
Improved Film Cooled Annular Combustor.
PAT-APPL-6-185 473 1455

FILM READERS
Performance (Engineering)
Engineering Evaluation of the Vanguard M-731 Viewer.
AD-833 815/4 1399

FILMS
Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
AD-B040 437/6 1331

FILTERS
Efficient Design of Two-Dimensional Recursive Digital Filters. Final Report.
UCID-18819 1361

FILTRATION
Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
PB81-127391 1385

FINANCIAL SERVICES
Study of Loan Management Operations.
PB81-139248 1301

FINANCING
Financial Needs of Small Minority Firms.
PB81-126852 1300

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
PB81-139271 1301

Study to Indentify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part II: Appendix 1, Home Owner Questionnaire.
PB81-139289 1301

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part III: Appendix 2, Lending Institution Questionnaire.
PB81-139297 1301

FINE ARTS
Materials from the National Arts and the Handicapped Information Service: Annotated Bibliography. Second Draft.
ED-183 158 1298

FINES
Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
PB81-122723 1384

FINGERS
Non-Fouling Print Stylus.
PATENT-4 206 466 1399

FINITE ELEMENT ANALYSIS
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

Program Manual NSUP.
AD-A092 474/6 1393

Time-Domain Method for Computing Forces and Moments Acting on Three Dimensional Surface-Piercing Ship Hulls with Forward Speed.
AD-A092 475/3 1393

FINITE ELEMENT METHOD
Abstract Model of the Finite Element Method.
LA-8468-T 1377

FIRE CONTROL RADAR
Multisensors
RF-4C Digital Signal Transfer Unit Multisensor Display System (DSTUMDS).

KEYWORD INDEX

AD-B010 501/5 1435

FIRE CONTROL SYSTEM COMPONENTS
Safety Evaluation of Fire Control Systems - Electrical and Electronic Equipment.
AD-A092 174/2 1435

FIRE DETECTION SYSTEMS
Fire Detection and Extinguishment. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855256 1394

FIRE EXTINGUISHERS
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
AD-B044 225/1 1289

FIRE EXTINGUISHING AGENTS
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
AD-B044 225/1 1289

FIRE RESISTANT COATINGS
Exploratory Development of Coated Fabric for Fire Proximity Suits.
AD-B029 209/4 1369

FIRE RESISTANT MATERIALS
Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396

Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389

FIRE RESISTANT TEXTILES
Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437

Exploratory Development of Coated Fabric for Fire Proximity Suits.
AD-B029 209/4 1369

FIRE SAFETY
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394

Development and Testing of a Model for Fire Potential in Nuclear Power Plants.
NUREG/CR-1819 1422

Fire Detection and Extinguishment. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855256 1394

FIRST WALL
First Wall Engineering and Technology in Fusion.
GA-A-16089 1416

Consistent HYLIFE Wall Design That Withstands Transient Loading Conditions.
UCRL-84271 1419

Parametric Analysis of Stress in the ICF HYLIFE Converter Structure.
UCRL-84272 1419

Properties of Lead-Lithium Solutions.
UCRL-84273 1419

FISHES
Comparative Histopathology of Acanthocephalan Infections in Some Freshwater Fishes.
AD-A092 258/3 1316

Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317

Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329

FISHING
Reprint: The Efficiency of Mollies, 'Poecilia mexicana', as Live Bait for Pole-and-Line Skipjack Fishing: Fishing Trials in the Tropical Central Pacific,
PB81-120693 1316

Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica,
PB81-125775 1291

FISHWAYS
Fishways: Design and Operation. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801623 1317

FISSION FRAGMENTS
Dynamical Aspect of Fission Mechanism. Study of the exp 237 Np(N,F) Reaction Induced by Neutron Energies Between 0.5 and 1.75MeV.
CENBG-7809 1442

Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

FISSION ISOMERS
New Results on the Spectroscopy and Dynamics of Fission.
DOE/ER/01388-452 1443

FISSION NEUTRONS
Prompt Fission Neutron Spectra and Anti nu p.
LA-UR-80-2707 1423

FISSION PRODUCT RELEASE
Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
DOUNREAY-TRANS-826 1337

FISSION PRODUCTS
Exp 235 U Fission Product gamma Spectra: A Comparison Between Experiment and Calculation.
CEGB-RD/B/N-4667 1442

Exchange of Lyotropic Series Cations by Micaceous Vermiculite and Its Weathering Products Determined by Electron Microscopy and Radiochemical Analysis. Final Technical Report, June 1, 1965-October 31, 1978.
DOE/EV/01515-84 1426

Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
HEDL-SA-2227-FP 1444

FIXED INVESTMENT
Regulating Hospital Capital Investment: The Experience in Massachusetts. Executive Summary.
PB81-130544 1321

Regulating Hospital Capital Investment: The Experience in Massachusetts. Final Report.
PB81-130551 1321

FLAT PLATE COLLECTORS
Flat Plate Thermal Solar Collectors: A Physical Background,
PB81-135741 1363

FLAVOR MODEL
New Experimental Evidence for a New Interpretation of Flavor SU(3).
DOE/ER/03992-402 1444

FLEXIBLE MATERIALS
Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353

FLIGHT CONTROL SYSTEMS
The Effects of the Direction of Control Loading on a One-Dimensional Tracking Task.
AD-A092 459/7 1288

FLIGHT CREWS
Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287

FLIGHT INSTRUMENTS
Display systems
Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
AD-B004 191/3 1290

FLIGHT RECORDERS
An Improved Flight Data Transcriber.
AD-A091 981/1 1398

FLIGHT SIMULATORS
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305

FLIGHT TESTING
USAF Test Pilot School. Flight Test Handbook. Performance. Theory and Flight Techniques. Chapters 1 through 9.
AD-A091 990/2 1303

FLIGHT TRAINING
Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume I. Executive Summary.
AD-A092 020/7 1303

Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume II. Evaluation Report.
AD-A092 021/5 1303

An Evaluation of the Application of ISD to P-3 Pilot Training.
AD-A092 126/2 1304

FLOATING BODIES
Hardware and Performance Evaluation: Tethered Float Breakwater Near-Shore Ocean Model.
AD-A092 059/5 1381

FLOATING DEBRIS
Boston Harbor, Massachusetts Main Report for Debris Removal. Volume I. Revision.
AD-A092 396/1 1382

Boston Harbor, Massachusetts Feasibility Report for Debris Removal. Volume 2. Part A-Debris Inventory. Summary Sheets. Part B - Land Enhancement. Summary Sheets. Revision.
AD-A092 397/9 1382

Final Environmental Impact Statement on Debris Removal from Boston Harbor, Massachusetts. Revision.
AD-A092 398/7 1382

FLOODS
Arizona Floods of September 5 and 6, 1970. A Report to the Administrator.
PB81-138067 1394

FLOW FIELDS
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288

FLOW RATE
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

FLOW RESTRICTION
Flow Restrictions in Railway Tunnels,
PB81-130395 1389

FLOWMETERS
Ultrasonic Flowmeters: A Progress Report.
UNI-TR-4 1398

FLUE GASES
Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381

FLUID FLOW
Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

FLUIDIC AMPLIFIERS
Two-Stage Servovalve Development Using a First-Stage Fluidic Amplifier.
AD-A092 011/6 1393

FLUIDIC CONTROL
Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455

FLUIDICS
Two-Stage Servovalve Development Using a First-Stage Fluidic Amplifier.
AD-A092 011/6 1393

FLUIDIZED-BED COMBUSTORS
Industrial Application Fluidized Bed Combustion: Indirect Fired Process Heaters. Final Program Report.
DOE/ET/10379-T3 1453

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

FLUORESCENCE
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334

FLUORIDES
Reprint: Raman Spectra of SiF4 and GeF4 Crystals.
AD-A092 332/6 1334

Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
AD-A092 333/4 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
AD-A092 336/7 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
AD-A092 338/3 1334

Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322

FLUORINATED HYDROCARBONS
Perfluorinated Epoxides.
PAT-APPL-6-182 563 1374

Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332

FLUORINE 19 REACTIONS
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

FLUOROPOLYMERS
Perfluorocompounds.
PAT-APPL-6-182 562 1374

Perfluorocarbon Ethers.
PAT-APPL-6-182 564 1374

FLUTTER
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288

A Finite Element Mach Box Procedure for Flutter Predictions of Panels in Three-Dimensional Supersonic Unsteady Potential Flow.
AD-B017 944/0 1438

Tape recorders
Analysis of the Power Spectral Density of Tape Recorder Flutter.
AD-B010 481/0 1399

FLY ASH
Effects of Effluents of Coal Combustion and Gasification Upon Lung Structure and Function. Annual Report.
DOE/MC/11284-T2 1328

FOOD
Food System Support of the Relocation Strategy in California. Volume I. Analysis.

AD-A092 056/1 1400

Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
AD-A092 164/3 1400

Postharvest Food Losses in Sri Lanka; Report of a Workshop, 11-16 February 1980.
PB81-129975 1323

FOOD INDUSTRY

Impact of Land Use on Solar Industrial Process Heat for the Food Processing Industry.
UCRL-85019 1388

FOOD PACKAGING

Reprint: Migration Models for Polymer Additives,
PB81-126146 1323

FOOD PROCESSING

Postharvest Food Losses in Sri Lanka; Report of a Workshop, 11-16 February 1980.
PB81-129975 1323

FOOD SERVICE

Food System Support of the Relocation Strategy in California. Volume I. Analysis.
AD-A092 056/1 1400

Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
AD-A092 164/3 1400

FORAMINIFERA

Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otiozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343

FORCE LEVEL

A Methodology for Predicting Ammunition Requirements as a Function of Force Size.
AD-B013 302/5 1432

FORECASTING

Software Project Forecasting.
AD-A091 923/3 1353

Long-range Forecasting Methods. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851693 1297

FOREIGN MILITARY SALES

Correct Balance of Defense's Foreign Military Sales Trust Fund Unknown.
AD-A091 894/6 1296

FOREIGN POLICY

The Legacy of Ideology in Soviet Foreign Policy Toward the West.
AD-A092 283/1 1302

FOREIGN TECHNOLOGY

The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
AD-A091 887/0 1373

Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1976-50B.
AD-A091 888/8 1292

Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288

Production of Nitrous Oxide in a Rocket Motor Exhaust.
AD-A091 893/8 1380

Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938,
AD-A091 915/9 1288

Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456

Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
AD-A091 933/2 1359

Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
AD-A091 957/1 1353

Interdiffusion of Metals and Semiconductors.
AD-A091 961/3 1450

Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
AD-A091 962/1 1288

An Improved Flight Data Transcriber.
AD-A091 981/1 1398

European Scientific Notes. Volume 33, Number 5,
AD-A092 024/9 1297

Harwell Subroutine Library. A Catalogue of Subroutines (1973). Supplement Number 2.
AD-A092 034/8 1375

Reprint: Further Remarks on the Mechanism Producing the Symptoms of Meniere's Disease.
AD-A092 046/2 1317

Reprint: Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance.
AD-A092 048/8 1308

Reprint: Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions.
AD-A092 051/2 1440

Reprint: Frequency-Stabilized Hybrid CO Laser.
AD-A092 053/8 1439

A 20 Years' Survey of Laser Science and Technology in China. II--Translation.
AD-A092 097/5 1439

POSER - A Process Organisation to Simplify Error Recovery,
AD-A092 103/1 1354

Microwave Frequency Memory,
AD-A092 104/9 1354

The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
AD-A092 105/6 1373

Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326

AGARD Index of Publications, 1977 - 1979.
AD-A092 125/4 1402

Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363

Evaluation of the Scott Aviox Emergency Oxygen System during a Rapid Decompression to 25,000 Feet.
AD-A092 204/7 1323

Disinfection of Viruses in Water by Ozone.
AD-A092 252/6 1318

An Investigation of HF Direction-Finding Accuracy on the Churchill-Ottawa Auroral Zone Path.
AD-A092 311/0 1410

An Investigation of HF Direction-Finding Accuracy on the Frobisher Bay-Ottawa Auroral Zone Path.
AD-A092 312/8 1410

A Study of Filled and Sparse Line Array Beamformers.
AD-A092 367/2 1407

Air Saturation Dive 4 - 8 February 1980, CEDD Test Number 1-80.
AD-A092 368/0 1328

Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
AECL-6206 1327

Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335

MAKSIMA-CHEMIST: A Program for Mass Action Kinetics Simulation by Automatic Chemical Equation Manipulation and Integration Using Stiff Techniques.
AECL-6413 1335

Basic Graphical Data Management System (BAGDAMS Version 1.0). User's Guide and Reference Handbook.
AECL-6487 1356

Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429

Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Form Factor and Multistep-Transfer Effects in Light-Ion and Heavy-Ion Induced Transfer Reactions on Rotational and Transitional Nuclei.
BUP-104 1442

Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292

Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
CBPF-A0003/79 1292

Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292

Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

Note on the Differential Thermal Analysis of Amazonian Archeological Pottery.
CBPF-A0009/79 1302

Research on TFR.
CEA-CONF-4696 1414

Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442

Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

Tests on Mechanical Behavior of 304 L Stainless Steel under Constant Stress Associated with Cyclic Strain.
CEA-CONF-4801 1370

Raman and I.R. Spectra of the NH and ND Stretching Region in Polycristalline Imidazole, exp 15 N and D Substituted Analogs.
CEA-CONF-4808 1335

Isotopic Exchange Reactions. Kinetics and Efficiency of the Reactors Using Them in Isotopic Separation.
CEA-R-5000 1420

Contribution to Research on the Elastic and Elastoplastic Behavior of Porous Materials.
CEA-R-5006 1373

Quantitative Analysis of Carbon in Plutonium.
CEA-R-5013 1335

Study of the Kinetics of Oxygen Redistribution in UOsub(2+ X) and UCeO sub 2 Due to a Temperature Gradient.
CEA-R-5020 1336

Exp 235 U Fission Product gamma Spectra: A Comparison Between Experiment and Calculation.
CEGB-RD/B/N-4667 1442

Dynamical Aspect of Fission Mechanism. Study of the exp 237 Np(N,F) Reaction Induced by Neutron Energies Between 0.5 and 1.75MeV.
CENBG-7809 1442

Analysis of a Quasi-Molecular Type Dissociation Involving Three Charged Fragments. Observation and Discussion of the Production of alpha Particles at Rest from the exp 12 C- alpha - exp 12 C Structure.
CENBG-7919 1442

Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

0.5 to 6 MeV Ar Ion Induced X-Ray Emission in View to Analytical Application.
CRN-CPR-79-7 1336

Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443

Quasiconfigurations: An Approach to Effective Forces.
CRN-PN-78-26 1443

3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336

Characterization of the Higgs Phase in Lattice Gauge Theories.
DESY-79/72 1443

Area Law as a Consequence of the Loop Wave Equation.
DESY-79/82 1448

Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
DOUNREAY-TRANS-826 1337

Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
EUR-CEA-FC-1013 1416

Comments on Various Derivative Methods of the Parametric Dispersion Relations.
EUR-CEA-FC-1014 1448

Mechanism of Electric Conductivity in Beryllium Oxide.
IAE-3151 1450

Non-Orthogonal Harmonic-Oscillator Basis for Three-Body Problems.
IFT-P-11/79 1444

Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
IFUSP-P-180 1448

Description of Final States and Infrared Divergences in Quantum Electrodynamics.
IFVE-OTF-79-96 1444

General Solution of Many-Channel Inverse Scattering Problem.
IFVE-OTF-79-139 1444

Conformal Invariance in the Quantum Field Theory.
INIS-mf-5640 1444

Nonlinear Processes of Magnons in Insulating Ferromagnetic Materials.
INIS-mf-5641 1451

Three-Critical Phenomena in the He exp 3 -He exp 4 Mixture.
INIS-mf-5642 1452

Relaxation Rates of Electronic and Nuclear Magnons in Antiferromagnetic Materials.
INIS-mf-5643 1451

Color Centers in KCN: a Structural Analysis of Crystalline Domains.
INIS-mf-5644 1437

Calculation of the Electronic Structure and Contact Hyperfine Parameters of Interstitial Hydrogen in Alkaline - Earth Fluorides.

INIS-mf-5646 1451

Calculation of the Hyperfine Constants of the V /sub K/ Center in CaF sub 2 , SrF sub 2 and BaF sub 2.
INIS-mf-5647 1451

Determination of Fano's Factor in Semiconductors.
INIS-mf-5648 1451

Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
INIS-mf-5649 1444

Laser Modes as an Eigenfunction of an Operator Equation.
INIS-mf-5653 1440

Magnetic Excitations in Amorphous Ferromagnets.
INIS-mf-5654 1451

Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

Ignition Experiment - Alternatives.
IPP-4/179 1416

MHD Pressure Losses in Pipeline Systems for Toroidal Fusion Reactors.
IPP-4/180 1417

Maximum Attainable Power Density and Wall Load in Tokamaks Underlying Reactor Relevant Constraints.
IPP-4/182 1417

Complete Fusion exp 20 Ne + exp 12 C at 110 MeV.
ISN-78-26 1445

Zircaloy Cladding Embrittlement Due to Steam Oxidation in Stagnant Steam Condition.
JAERI-M-8081 1371

Metallurgical and Environmental Factors Influencing Creep Behaviour of Hastelloy-X.
JAERI-M-8153 1371

Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424

Oxidation Kinetics and Spallation of Oxide Film of the Structural Metal in HTR Helium under Thermal Cycles.
JAERI-M-8210 1371

Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420

Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454

Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

Plasmator. A Numerical Code for Simulation of Plasma Transport in Tokamaks.
JEN-459 1417

Elastic Pd and Quasifree A(p, Nd)B Scattering at Intermediate Energies.
JINR-E-2-12369 1445

Suggestion About the Absence of the Phase Transition, Vacuum Degeneration, Spontaneous Symmetry Breaking and Zero-Mass Goldstone-Bosons in QFT Models of the Type Gphi exp 4.
JINR-E-2-12637 1445

Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
JINR-R-1-12125 1445

Structure of Representations of Conformal Supergroup in the OSp(1,4) Basis.
JINR-R-2-12670 1449

Calculation of Energy Levels of mu -Mesic Molecules of Hydrogen Isotopes Using a Continuous Analog of the Newton Method and Subspace Iteration Method.
JINR-R-4-12671 1339

Discrete Subgroups of the Three-Dimensional Rotation Group.
JINR-R-5-12459 1449

Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

Induced Isospin Mixing in Direct Nuclear Reactions.
Juel-Spez-47 1445

Status of the Nuclear Data Library KEDAK-3, July 1979.
KFK-2386/I 1445

Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
KFK-2860 1429

As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

HOTRAN-3 Program for Reactor Core Thermohydraulic Studies in the Three-Channel Approximation.
KFKI-1979-26 1428

Tetrads of Observers and Einstein's Equations.
KFKI-1979-65 1449

Manifestation of the Frustration Effect in S= 1/2 Quantum Spin Systems.
KFKI-1980-03 1451

Simple Parametrization of the Structure Functions of the Photon.
LPC-79-16 1446

Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
LYCEN-7868 1373

SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
LYCEN-7923 1451

Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371

Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337

Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

Peculiarities of Radiation Heat Transfer of Structural Elements of High-Temperature Physical Installations.
NIIEFA-P-A-0424 1417

Analysis of the System of Poloidal Fields in the "T-10M" Device.
NIIEFA-P-B-0430 1417

Computer Program for the Determination of X-Ray Reflections from a Randomly Oriented Polycrystalline Sample by Diffractometer.
NRCN(TN)-023 1437

Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433

Dimensional Co-ordination in Building (Comhordu Toiseach.san bhFoirgniocht).
PB81-122509 1394

Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394

Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395

Cadmium Seminar 1980, Proceedings Held at the Lake Palace Hotel, Udaipur on 26 February 1980.
PB81-124109 1372

Light Rail Application and Design,
PB81-124620 1384

Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope),
PB81-125171 1338

Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
PB81-125189 1338

Warmtebesparing door Isolatie en Stookwijze Bereikt in Twee Woningen-Woning II (Heat Savings by Insulation and Usage of the Heating System Achieved in Two Houses),
PB81-125197 1363

Passenger Transport Innovation in Adelaide: Taxi-Cabs.
PB81-125460 1384

Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator)--Translation.
PB81-125650 1309

A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385

Metoder foer Bestaemning av Halkfrekventa Vaegstraeckor (Methods for Detecting Road Sections with High Frequency of Ice Formation),
PB81-128290 1385

Studier av Halka Pa Vaegar (Studies of Slipperiness on Roads),
PB81-128316 1385

Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
PB81-128753 1389

Research on Energy Conservation for Cars and Goods Vehicles,
PB81-129090 1363

Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374

Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388

Prediction of Impact Factor for Military Bridges.
PB81-130379 1386

Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367

Flow Restrictions in Railway Tunnels,
PB81-130395 1389

Motor Vehicles and the Environment: Reply to UNEP (United Nations Environment Programme) Questionnaire.
PB81-130437 1389

Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343

Maetning av Braenslefoerbrukning pa Landsvaeg: Effektstudier vid Olika Vaeg- och Trafikmiljoeer (Measurement of Fuel Consumption on Country Roads: Study of Effects of Different Road and Traffic Situations),
PB81-130767 1363

Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas),
PB81-130775 1394

A Non-Parametric Approach to the Change-Point Problem,
PB81-132854 1377

Flat Plate Thermal Solar Collectors: A Physical Background,
PB81-135741 1363

Prediction of Concentration Profiles for a NIMCIX Column Absorbing Uranium from Aqueous Solution.
PER-26 1430

Semi-Annual Progress Report of Power Reactor and Nuclear Fuel Development Corporation, Tokai Works. July-December 1977.
PNCT-831-78-02 1430

Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

Gauge Field Copies.
PUC-tn-01/79 1446

Scattering Theory and 1/N Expansion in the Chiral Gross-Neveu Model.
PUC-tn-08/79 1446

Gravitational Torque in General Relativity.
PUC-tn-11/79 1449

Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

Nonlinear Kinematic Hardening under Non-Proportional Loading.
RISO-R-408 1372

Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

FOREST LAND

Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291

FOREST TREES

Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291

Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374

Skyline Harvesting in Appalachia.
PB81-134173 1291

Flowering and Seed Production in Seven Hardwood Species.
PB81-141996 1292

FORESTRY

Carbohydrate Levels in Current-year Shoots of Sugar Maple.
PB81-134199 1291

FORGING

Computer Controlled Forging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855165 1391

FORMALDEHYDE

Inactivation on Non-A, Non-B Hepatitis Agent.

PAT-APPL-6-150 320 1325

FORWARD LOOKING INFRARED SYSTEMS
Measurement of Performance Parameters for a FLIR Thermal Imaging System.
AD-A092 140/3 1411

FOSSILS
Reprint: Planktonic Microfossils and the Recognition of Ancestors.
AD-A092 508/1 1342

FRACTURE (MECHANICS)
Molecular Fraction Behavior in Oriented Polymers.
AD-A092 241/9 1373

Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449

FRACTURES (MATERIALS)
Nondestructive Testing of Fractures. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851784 1398

Nondestructive Testing of Fractures. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851792 1398

FRAGMENTATION AMMUNITION
Mathematical models
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435

FRAGMENTATION WARHEADS
HIBAL Program Preliminary Warhead-Design. Volume I.
AD-A092 071/0 1432

HIBAL Program. Preliminary Warhead-Design. Volume II. Appendices.
AD-A092 072/8 1432

Mathematical models
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435

FRAMED STRUCTURES
General Applicability of a Nonlinear Model of a One Story Steel Frame,
PB81-124877 1395

FREE ELECTRON LASERS
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

FREEZING
The Neumann Solution Applied to Soil Systems,
AD-A092 244/3 1350

FRICTION
Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
AD-A091 909/2 1392

FROZEN FOODS
Reprint: Instrument for Determining Depth of Dehydration of Frozen Fish,
PB81-120727 1323

FUEL CONSUMPTION
P-3 Orion Fuel-Saving Modification Wind Tunnel Study,
AD-A091 906/8 1288

Maetning av Braenslefoerbrukning pa Landsvaeg: Effektstudier vid Olika Vaeg- och Trafikmiljoeer (Measurement of Fuel Consumption on Country Roads: Study of Effects of Different Road and Traffic Situations),
PB81-130767 1363

FUEL CYCLE
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427

FUEL ELEMENT CLUSTERS
Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429

FUEL ELEMENT FAILURE
Failure Analysis of Carbide Fuels under Transient Overpower (TOP) Conditions.
HEDL-SA-2006-FP 1429

FUEL FEEDING SYSTEMS
State-of-the-Art Assessments on Critical Coal Conversion Equipment.
CONF-801090-3 1330

Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

FUEL PINS
Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

FUEL REPROCESSING PLANTS
Safety Evaluation of a Conceptual Fuel Recycle Complex.
DP-MS-80-6 1429

Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

FUEL RODS
Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

FUEL SLURRIES
Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

FUEL TANKS
Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
AD-B014 875/9 1455

FUELS
AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455

FUNGI
Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316

FUNGUS DISEASES
Reprint: Ketoconazole in Early and Late Murine Coccidioidomycosis.
AD-A091 921/7 1317

FURROWS
Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349

GADOLINIUM 157 TARGET
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

GADOLINIUM 158 TARGET
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

GALLIUM ARSENIDE LASERS
Fiber optics
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439

GALLIUM ARSENIDES
Power FET Contact Technology.
AD-A092 320/1 1351

New Passivation Methods of GaAs.
AD-A092 354/0 1450

GAME THEORY
Game Theory, Decision Theory, and Social Choice Theory in the Context of a New Theory of Equity.
AD-A092 499/3 1378

GAMMA RAYS
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439

GARNERVILLE DAM
National Dam Safety Program. Garnerville Dam (Inventory Number N.Y. 744), Hudson River Basin, Rockland County, New York. Phase I Inspection Report.
AD-A092 042/1 1381

GAS ANALYSIS
Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope),
PB81-125171 1338

GAS CHROMATOGRAPHY
Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
PB81-125189 1338

GAS DISCHARGES
A New Theory for Striations with Experimental Verifications.
AD-A092 058/7 1447

GAS DYNAMICS
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456

Gasdynamic Particle Accelerators - An Optimization,
AD-A092 069/4 1395

Study of Gas Dynamic Effects in Non-Uniform High Pressure Electrical Discharges.
AD-A092 413/4 1437

GAS FLOW
Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454

Gasdynamic Particle Accelerators - An Optimization,
AD-A092 069/4 1395

GAS LASERS
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439

Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439

Near Infrared Gas Lasers.
AD-B036 761/5 1439

Data processing
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

GAS TURBINES
AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455

Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455

Hot Helium Flow Test Facility Summary Report.
GA-A-15885 1427

Fuel Valve.
PAT-APPL-6-187 646 1455

GASES
Reprint: The Dissociation Energies of Gaseous Praseodymium- and Neodymium-Monoxides and Their Structure.
AD-A092 488/6 1334

Method for Improving Dissolution Efficiency in Gas-Absorption and Liquid Extraction Processes.
PAT-APPL-6-111 495 1337

Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
PAT-APPL-6-195 188 1396

GASOLINE
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

GASTROINTESTINAL DISEASES
Health Planning Related to Environmental Factors. Volume II: Foodborne and Waterborne Intestinal Illnesses Module,
HRP-0902233/6 1319

GATE (GARP ATLANTIC TROPICAL EXPERIMENT)
Kinematic Features of the Large-Scale Mean State Phase II of Gate and Comparison with Phase III Features.
AD-A092 444/9 1295

GATES (CIRCUITS)
Magnetic materials
Magnetic Bubble Research.
AD-B002 919/9 1437

GAUSSIAN PROCESSES
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
AD-A092 163/5 1375

GCFR REACTOR
Analysis of the New GCFR Upper and Lower Plenum Flow-Through Shields.
CONF-800942-4 1422

Hot Helium Flow Test Facility Summary Report.
GA-A-15885 1427

GCFR Steam Generator Conceptual Design.
GA-A-15894 1428

Gas-Cooled Fast Breeder Reactor. Quarterly Progress Report, February 1-April 30, 1980.
GA-A-15900 1428

GELS
Electric Gel Slicer.
PAT-APPL-6-174 239 1396

The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
PB81-132987 1324

GENERAL PURPOSE BOMBS
Wind tunnel tests
Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B007 733/9 1438

Magnus and Roll-Damping Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B008 209/9 1434

GENERAL RELATIVITY THEORY
Gravitational Torque in General Relativity.
PUC-tn-11/79 1449

GEOCHEMICAL SURVEYS
Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1348

GEOLOGY
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.

AD-A092 274/0 1342

GEOMAGNETISM
Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411

Low Frequency Geomagnetic Fluctuations (.04 to 25 Hz) on Land and on the Floor of Monterey Bay.
AD-A092 399/5 1411

GEOMORPHOLOGY
Influence of Wave Refraction on Coastal Geomorphology-Bull Island to Isle of Palms, South Carolina.
AD-A091 913/4 1341

GEOPRESSURED SYSTEMS
Investigation and Evaluation of Geopressured-Geothermal Wells.
DOE/ET/28460-5 1345

GEOTHERMAL DISTRICT HEATING
Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction.
BNL-51224(V.2) 1344

GEOTHERMAL FLUIDS
Gas Saturation in Formation Waters.
PB81-130759 1343

GEOTHERMAL POWER PLANTS
Geothermal Materials Survey : Arkansas Power and Light Development and Demonstration Project. 100KW Power System Using Direct Contact Heat Exchangers, El Dorado, Arkansas.
DOE/ET/27026-T4 1330

GEOTHERMAL PROCESS HEAT
Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction.
BNL-51224(V.2) 1344

GEOTHERMAL PROSPECTING
Gas Saturation in Formation Waters.
PB81-130759 1343

GEOTHERMAL RESOURCES
Peregrine Falcon Study. Final Report.
SAN-2068-1 1388

GEOTHERMAL WELLS
Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction. Volume 1.
BNL-51224(V.1) 1344

Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction.
BNL-51224(V.2) 1344

GEOTHERMY
Coso Monitoring Program.
AD-A092 417/5 1343

GERMANIUM
Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

Determination of Fano's Factor in Semiconductors.
INIS-mf-5648 1451

GLASS
An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367

Reprint: Modification of the Hillig-Charles Theory for Static Fatigue of Glass.
AD-A092 492/8 1367

Reprint: Importance of Crack Tip Radii in Fracture and Fatigue of Glass.
AD-A092 493/6 1367

Investigation on the Damage Threshold of Films Coated on Various Silicate, Fluorophosphate and Phosphate Laser Glasses. Final Report, January 1, 1979-August 29, 1980.
DOE/DP/40096-1 1440

Reprint: Thermal Effects in Sharp-Particle Contact.
PB81-119851 1367

Reprint: Effect of Particle Impact Angle on Strength Degradation of Glass.
PB81-121493 1368

Reprint: Strength Degradation of Glass Impacted with Sharp Particles: I, Annealed Surfaces.
PB81-121527 1368

AR Film on Phase-Separated Glass. Final Report, January 1979-April 1980.
UCRL-15285 1440

GLIDE SLOPE
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287

GLIDERS
Sailplanes. January, 1972-March, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850596 1290

Sailplanes. January, 1970-July, 1980 (Citations from the Engineering Index Data Base).
PB81-850604 1290

Sailplanes. January, 1970-March, 1980 (Citations from the NTIS Data Base).
PB81-850612 1290

GLOW DISCHARGES
A New Theory for Striations with Experimental Verifications.
AD-A092 058/7 1447

GLUCOSE
Reprint: Influence of Temperature on Complement-Dependent Immune Damage to Lipsomes.
AD-A092 087/6 1318

GLUON MODEL
Difficult States in the Quark Model: Glueballs and the Pion. CTP No. 874.
CONF-800724-45 1443

GLUONS
Difficult States in the Quark Model: Glueballs and the Pion. CTP No. 874.
CONF-800724-45 1443

GLYCOLIPIDS
Reprint: Immune Reactivities of Antibodies against Glycolipids.
AD-A092 002/5 1317

GLYOXAL
Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369

GOLD
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

GOLD 197 TARGET
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

GONIOMETERS
A New Angular Displacement Transducer.
AD-C019 184/1 1396

GORJE
Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
AD-B014 875/9 1455

GOVERNMENT EMPLOYEES
A Six State Study of Impasse Procedures in the Public Sector.
PB81-130718 1307

GOVERNMENT POLICIES
Moving from Reaction to Anticipation in U.S. Import Policies.
PB81-125544 1300

GRAIN BOUNDARIES
Group Representation of Bicrystal Invariant Translations with an Application to the Topology of Secondary Grain Boundary Dislocations.
DOE/ER/05002-14 1370

GRAIN ELEVATORS
The Investigation of Grain Elevator Explosions.
PB81-123549 1291

GRAINS (FOOD)
The Impact of Demand-Sensitive Railroad Rates Upon the Storage and Transportation System for U.S. Feed Grains.
PB81-134165 1291

GRANTS
Summary of Findings on Home Mortgage Disclosure Act (HMDA) Data Users.
PB81-139230 1299

GRANULATION
Granulation and Coating by Improved Method of Heat Removal.
PATENT-4 213 924 1390

GRAPHICS
Television display systems
INTERAND Target Annotation System.
AD-B001 109/8 1435

GRAPHITE
Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
DOE/ER/04445-T1 1336

Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

Material Selection for TFTR Limiters.
PPPL-1719 1418

GRASS
Revegetation of Alaskan Coal Mine Spoils. Progress Report.
DOE/EV/10256-1 1345

GRASSES
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291

GRAVITATION
Tetrads of Observers and Einstein's Equations.
KFKI-1979-65 1449

GRAY SCALE
Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354

GREAT BRITAIN
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,
PB81-139016 1310

GREEN RIVER BASIN
Green River Basin Flow Forecasting Models.
PB81-124448 1343

GROUND MOTION
Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
PB81-122533 1393

Full-Scale Experimental Investigation of a Modern Earth Dam,
PB81-123788 1384

Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
PB81-124000 1384

GROUND SHOCK
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342

GROUND STATE
Reprint: Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State.
AD-A092 335/9 1334

GROUND WATER
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344

GROUND WATER MOVEMENT
Basin Development and Water Allocation,
PB81-127276 1343

GROUPS (MATHEMATICS)
Nonlinear Semigroup for Controlled Partially Observed Diffusions.
AD-A092 188/2 1376

Detection, Estimation, and Control on Group Manifolds.
AD-A092 386/2 1377

GUAM
Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330

GUIDANCE
Guidance and Control of Anti-Tactical Ballistic Missiles.
AD-A092 015/7 1400

GUIDED MISSILE ANTENNAS
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359

GUIDED MISSILE COMPONENTS
Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357

GUIDED MISSILE LAUNCHERS
Reflexive Launch Strategies.
AD-A092 300/3 1400

GUIDED MISSILE RANGES
Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

GUIDED MISSILES
Evaluation of Time Domain EM Coupling Techniques. Volume II.
AD-A092 032/2 1452

GUIDELINES
Environmental Assessment Data Systems User Guide: Project Profile System.
PB81-125825 1299

GULF OF NICOYA (COSTA RICA)
Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica,
PB81-125775 1291

GULF STREAM
Reprint: Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
AD-A092 001/7 1340

The Gulf Stream Meanders Experiment. Hydrographic Data Report. R/V Endeavor Cruises, EN-040 (2-8 August 1979) EN-045 (16-23 November 1979),
AD-A092 144/5 1349

Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342

GUN BARRELS
Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.

AD-A092 344/1 1435

Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436

GUN PROPELLANTS

The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435

GUNNERS

Preliminary Outline of Gunner Duties and Tasks for US/FRG MBT-70.
AD-A950 106/5 1436

GUNNERY TRAINERS

MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.
AD-A092 266/6 1304

MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan,
AD-A092 267/4 1304

MAGLAD. Trainer Engineering Report Demonstration Results.
AD-A092 477/9 1305

GUNS

Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436

GUSTS

Airframes

Design Manual for Vertical Gusts Based on Power Spectral Techniques.
AD-879 736/7 1289

GYROSCOPES

Evaluation/Redesign of the F-105 Pitch Rate Gyro Pack,
AD-A092 109/8 1412

GYROTRONS

Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351

HADRON REACTIONS

Monotonous Braking of High Energy Hadrons in Nuclear Matter.
JINR-E-1-12086 1445

HADRONS

Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446

HAFNIUM

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

HALIDES

Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332

HALL EFFECT

Power Circuit Utilizing Self Excited Hall Effect Switch Means.
PAT-APPL-6-189 237 1361

HAND GUNS

US Military Hand Guns. Examination of Literature for the Last Twenty Years.
AD-B029 722/6 1436

HANDBOOKS

USAF Test Pilot School. Flight Test Handbook. Performance. Theory and Flight Techniques. Chapters 1 through 9.
AD-A091 990/2 1303

Optical images

Handbook of Underwater Imaging System Design.
AD-904 472/8 1409

HANDICAPPED

Materials from the National Arts and the Handicapped Information Service: Annotated Bibliography. Second Draft.
ED-183 158 1298

HANDICAPPED PERSONS

Housing Needs of the Rural Elderly and Handicapped.
PB81-139446 1314

HANDLING

Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

HAPO

Radioactive Liquid Waste Discharged to Ground in the 200 Areas During 1977.
RHO-CD-34-4Q 1425

Radioactive Liquid Wastes Discharged to Ground in the 200 Areas During 1979.
RHO-CD-79-34-4Q 1425

HARBORS

Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
AD-A092 373/0 1295

Boston Harbor, Massachusetts Main Report for Debris Removal. Volume I. Revision.
AD-A092 396/1 1382

Boston Harbor, Massachusetts Feasibility Report for Debris Removal. Volume 2. Part A-Debris Inventory. Summary Sheets. Part B - Land Enhancement. Summary Sheets. Revision.
AD-A092 397/9 1382

Final Environmental Impact Statement on Debris Removal from Boston Harbor, Massachusetts. Revision.
AD-A092 398/7 1382

HARDWOODS

SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374

HARLEM VALLEY DAM

National Dam Safety Program. Harlem Valley Reservoir (Inventory Number N.Y. 273), Housatonic River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 040/5 1381

HARPOONS

Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340

HARROWER POND DAM

National Dam Safety Program. Harrower Pond Dam (Inventory Number NY207), Mohawk River Basin, Montgomery County, New York. Phase I Inspection Report,
AD-A092 227/8 1382

HARVESTING

Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay,
PB81-131765 1317

Skyline Harvesting in Appalachia.
PB81-134173 1291

HASTELLOY S

Air Oxidation and Seawater Corrosion of Hastelloy S and Hastelloy C-4.
PNL-3344 1372

HASTELLOY X

Metallurgical and Environmental Factors Influencing Creep Behaviour of Hastelloy-X.
JAERI-M-8153 1371

Oxidation Kinetics and Spallation of Oxide Film of the Structural Metal in HTR Helium under Thermal Cycles.
JAERI-M-8210 1371

Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

HASTELLOYS

Air Oxidation and Seawater Corrosion of Hastelloy S and Hastelloy C-4.
PNL-3344 1372

HAWAII

Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330

HAZARDOUS MATERIALS

Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text,
HRP-0902234/4 1320

HAZARDS

Risk and Public Policy.
PB81-120057 1394

Colored smokes

Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
AD-B004 405/7 1432

HAZE

Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370

HEALTH CARE REQUIREMENTS

Estimation of Spatial Demand for Hospital Services.
PB81-135790 1322

HEALTH MANPOWER EDUCATION

Schools of Public Health Trends in Graduate Education,
HRP-0902582/6 1306

HEALTH PLANNING

Health Planning Related to Environmental Factors. Volume II: Foodborne and Waterborne Intestinal Illnesses Module,
HRP-0902233/6 1319

Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text,
HRP-0902234/4 1320

Policies on Dental Health and Health Planning.
HRP-0902632/9 1320

HEALTH RESOURCES

Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321

HEALTH RISKS

Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329

HEALTH SERVICES

Report on Cardiac Catheterization and Open Heart Surgery Services.
HRP-0902557/8 1320

HEALTH STATISTICS

Community Health Profiles 1979 Rhode Island Dept. of Health.
HRP-0902554/5 1320

HEART

N-Acetyl-Cysteine Protects Against Cardiac Damage from Subsequently-Administered Cardio-Toxic Anthracycline in Cancer Therapy.
PAT-APPL-6-190 064 1326

HEART CATHERIZATION

Report on Cardiac Catheterization and Open Heart Surgery Services.
HRP-0902557/8 1320

HEART SURGERY

Report on Cardiac Catheterization and Open Heart Surgery Services.
HRP-0902557/8 1320

HEAT ENGINES

Highway Vehicle Systems Contractors Coordination Meeting, Seventeenth Summary Report.
CONF-791082-(Sum.) 1453

HEAT EXCHANGERS

High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428

Heat Exchangers for Space Heating. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851032 1380

HEAT FLUX

Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

HEAT LOSS

Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395

HEAT PIPES

Ceramic Heat Pipe Development. Quarterly Report, April 1, 1980-June 30, 1980.
DOE/TIC-11293 1379

HEAT RECOVERY

Laundry Heat Recovery, USMA, West Point.
AD-A092 060/3 1378

HEAT RESISTANT EXPLOSIVES

A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432

HEAT RESISTANT MATERIALS

A Characterization Study of Several Heat Resistant Explosives in Mild Detonating Cords.
AD-B015 229/8 1433

HEAT RESISTANT PLASTICS

Rotating bands

Development of a Thin-Wall 20mm Explosive Projectile.
AD-B007 705/7 1432

HEAT STORAGE

Synthesis of Research and Development in Mechanical Energy Storage Technologies. Progress Report, September 1, 1979-May 31, 1980.
DOE/ET/26106-T1 1366

HEAT TRANSFER

Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436

HEAT TRANSFER FLUIDS

Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

HEATING OILS

Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

HEAVY ION ACCELERATORS

Proceedings of the Heavy Ion Fusion Workshop.
LBL-10301 1441

Rapporteur Talk for IAEA Fusion Meeting, Brussels.
LBL-11429 1417

HEAVY ION REACTIONS

New Results on the Spectroscopy and Dynamics of Fission.

DOE/ER/01388-452 1443

Pion Production in Nucleus-Nucleus Collisions Below a Few GeV/Nucleon: Past, Present and Future.
LBL-10899 1445

HEAVY METALS
Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329

Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329

HEAVY NUCLEI
Application of the Shell Model to Nuclear Spectroscopy.
DOE/TIC-11287 1444

HEISENBERG MODEL
Manifestation of the Frustration Effect in S= 1/2 Quantum Spin Systems.
KFKI-1980-03 1451

HELICOPTER ROTORS
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454

Reverse Velocity Rotor System for Rotorcraft.
PATENT-4 227 856 1289

HELICOPTERS
The SOTAS-Scout-AAH/HELLFIRE System.
AD-A092 147/8 1288

Aerial gunnery
Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436

HELIUM 4 TARGET
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442

HELIUM II
Three-Critical Phenomena in the He exp 3 -He exp 4 Mixture.
INIS-mf-5642 1452

HELIUM IONS
Range Profiles of Low Energy (100 to 1500 EV) Implanted exp 3 He and exp 4 He in Tungsten. II. Analysis and Discussion. Materials Science Center Report No. 4108.
DOE/ER/03158-73 1336

HEPATITIS
Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319

Inactivation on Non-A, Non-B Hepatitis Agent.
PAT-APPL-6-150 320 1325

HEPATITIS VIRUSES
Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319

HEROIN
Reprint: Reduction of Heroin Intake in Baboons by an Economic Constraint.
AD-A092 342/5 1325

HETEROCYCLIC COMPOUNDS
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332

HEURISTIC METHODS
Inertial navigation
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412

HFIR REACTOR
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(Dr) 1420

HIGGS MODEL
Characterization of the Higgs Phase in Lattice Gauge Theories.
DESY-79/72 1443

HIGH-BETA PLASMA
Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
IFUSP-P-180 1448

HIGH ENERGY PHYSICS
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443

Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
DOE/ER/02009-139 1443

Theoretical Particle Physics. Progress Report, December 1, 1079-November 30, 1980.
DOE/ER/02009-140 1443

HIGH EXPLOSIVE AMMUNITION
Development of a Lightweight 25mm Explosive Projectile.
AD-B026 541/3 1433

Terminal ballistics
Development of a Thin-Wall 20mm Explosive Projectile.
AD-B007 705/7 1432

HIGH-FREQUENCY HEATING
Lower Hybrid Heating Associated with Mode Conversion on the Wisconsin Toroidal Octupole.
DOE/ET/53051-10 1447

HIGH LEVEL LANGUAGES
An ADA Language Model of the AN/SPY-1A Component of the AEGIS Weapon System.
AD-A092 260/9 1412

HIGH-LEVEL RADIOACTIVE WASTES
Inventory of Calcined Waste Stored at the ICPP as of September 1979.
ENICO-1044 1424

HIGH-PURITY GE DETECTORS
Determination of Fano's Factor in Semiconductors.
INIS-mf-5648 1451

HIGH STRENGTH ALLOYS
Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
AD-A092 186/6 1369

HIGH TEMPERATURE
Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367

Measurements
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360

HIGHER EDUCATION
Higher Education Uses of Telemedia in Virginia. Telecommunications Study Commission.
ED-183 206 1409

HIGHWAY MARKINGS
Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1367

HIGHWAYS
Wildlife Research Report. Part One.
PB81-124638 1384

The Effectiveness of Horizontal Drains.
PB81-124851 1384

Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1367

Erosion Control Product Testing Using Rainfall Simulation.
PB81-132995 1386

Highway Operation and Plant Damage.
PB81-133159 1387

HOLMIUM
Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

HOLOGRAPHY
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

HOMEOWNER HOUSING
Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency.
PB81-139032 1301

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
PB81-139271 1301

Study to Indentify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part II: Appendix 1, Home Owner Questionnaire.
PB81-139289 1301

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part III: Appendix 2, Lending Institution Questionnaire.
PB81-139297 1301

HOMOSEXUALITY
Homosexuality and the U.S. Military.
AD-A092 179/1 1308

HONEYWELL COMPUTERS
Software for Communication Between a Hewlett Packard 9825 Process Control Computer and a Honeywell 66/60 Time Sharing Computer.
GEPP-TIS-534 1357

HOSPITALS
An Application of Case-Mix Adjusted Lengths of Stay in Naval Medical Treatment Facility's Output Measurement.
AD-A092 409/2 1319

Plan for the Reduction of Excess Hospital Beds in the Bay and Saginaw Subareas.
HRP-0902558/6 1320

Regulating Hospital Capital Investment: The Experience in Massachusetts. Executive Summary.
PB81-130544 1321

Regulating Hospital Capital Investment: The Experience in Massachusetts. Final Report.
PB81-130551 1321

An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
PB81-132334 1321

Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
PB81-133365 1307

Estimation of Spatial Demand for Hospital Services.
PB81-135790 1322

HOUSES
Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

Solar Energy System Performance Evaluation, Design Construction, Bigfork, Montana, October 1979-April 1980.
SOLAR/1029-80/14 1380

HOUSING
Factors Influencing Crime and Instability in Urban Housing Developments,
PB81-128670 1309

HOUSING ALLOWANCE PROGRAMS
Services in Support of Housing Search: How Necessary and Effective in the Experimental Housing Allowance Program,
PB81-138992 1310

Enforcing Housing Quality Standards: Some Findings From the Experimental Housing Allowance Program,
PB81-139008 1310

Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,
PB81-139016 1310

Integrated Analysis of the Experimental Housing Allowance Program: Sixth Year Report.
PB81-139024 1310

Analyzing Allowance Program Administrative Costs: Account Structures and Methodology,
PB81-139412 1314

HOUSING (DWELLINGS)
Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388

HOUSING PLANNING
Urban Housing with Discrete Structures,
PB81-139057 1311

HOUSING STUDIES
Monitoring in Urban Counties.
PB81-138976 1310

Metropolitan Housing and the Income Tax,
PB81-139040 1311

Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139065 1311

Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139073 1311

Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139081 1311

Codebook for the Survey of Residential Buildings, Site I, Wave 3. Housing Assistance Supply Experiment.
PB81-139099 1311

Housing Production with Non Profit Sponsors.
PB81-139107 1311

Training Manual for Interviewers.
PB81-139115 1311

Field Supervisor Manual.
PB81-139123 1312

Multifamily Property Utilization Task Force.
PB81-139131 1312

Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139149 1312

Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139156 1312

Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139164 1312

Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139172 1312

Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,

PB81-139180 1312

Codebook for the Attitude Module of the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139198 1313

Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139206 1313

Insurance Coverage and Payment Policies. Rapid Turnaround Neighborhood Preservation Research. Task Number 3.
PB81-139214 1313

Summary of Findings on Home Mortgage Disclosure Act (HMDA) Data Users.
PB81-139230 1299

Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139255 1313

Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139263 1313

Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment,
PB81-139313 1313

Workshop on Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment. Workshop Framework and Paper Subjects,
PB81-139321 1313

Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139396 1314

Supplemental Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139404 1314

Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139420 1314

Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139438 1314

Housing Needs of the Rural Elderly and Handicapped.
PB81-139446 1314

Housing Our Families,
PB81-139453 1314

Codebook for the Attitude Module of the Household Survey, Site II, Wave 4. Housing Assistance Supply Experiment,
PB81-139461 1315

HOUSINGS

Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings--Translation.
AD-A092 095/9 1351

HP COMPUTERS

Software for Communication Between a Hewlett Packard 9825 Process Control Computer and a Honeywell 66/60 Time Sharing Computer.
GEPP-TIS-534 1357

HTGR TYPE REACTORS

Gas Reactor International Cooperative Program. HTR-Synfuel Application Assessment.
COO-4057-12 1427

Hot Helium Flow Test Facility Summary Report.
GA-A-15885 1427

Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367

High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428

HULLS (STRUCTURES)

Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392

HUMAN FACTORS ENGINEERING

MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323

Navy Manager's Guide for the Design Sections of MIL-H-46855.
AD-A092 009/0 1302

HUMAN POPULATIONS

External Dosimetry.
DOE/TIC-11273 1327

HUMAN RESOURCES

Human Resource Management in the Navy: The Specialists' Viewpoint.
AD-A092 279/9 1304

HUMANITIES

National Endowment for the Humanities Bibliography of Humanistic Reading for Grade Levels 1-8.
ED-183 160 1298

HUMIDITY

Reprint: Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source.
AD-A092 121/3 1294

HYBRID REACTORS

Preconceptual Design and Assessment of a Tokamak Hybrid Reactor.
PNL-2720 1418

Structural Evaluation of a DTHR Bundle Divertor Particle Collector.
WFPS-TME-78-100 1420

HYDRAULIC MINING

Field Test of Hydraulic Borehole Mining Systems in Shallow Uranium Sands.
PB81-128969 1348

HYDRAULIC MODELS

Corps of Engineers Hydraulic Design Criteria. Volume I.
AD-A092 237/7 1382

Corps of Engineers Hydraulic Design Criteria. Volume 2.
AD-A092 238/5 1382

HYDRAULIC STRUCTURES

Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387

HYDROCARBONS

Industrial Application Fluidized Bed Combustion: Indirect Fired Process Heaters. Final Program Report.
DOE/ET/10379-T3 1453

Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
PB81-126567 1324

Mobile Ambient Air Monitor.
RFP-3010 1398

HYDROCRACKING

Hydrocracking, January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851602 1339

Hydrocracking, January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851610 1339

Hydrocracking, January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851628 1339

HYDRODYNAMIC CODES

FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
AD-A092 143/7 1421

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435

HYDRODYNAMICS

HOTRAN-3 Program for Reactor Core Thermohydraulic Studies in the Three-Channel Approximation.
KFKI-1979-26 1428

Hydrodynamic Pressure and Added Mass for Axisymmetric Bodies,
PB81-122343 1438

HYDROELECTRIC POWER

Annual Report, 1979.
DOE/TIC-11212 1362

HYDROGEN

On the Photoassisted Hydrogen Production from Titania and Water.
AD-A092 223/7 1333

Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

Catalytic Conversion of Oxygenated Compounds to Low Molecular Weight Olefins. Progress Report for the Period March 1, 1980 to August 31, 1980.
DOE/PC/04717-5 1331

Calculation of Energy Levels of mu -Mesic Molecules of Hydrogen Isotopes Using a Continuous Analog of the Newton Method and Subspace Iteration Method.
JINR-R-4-12671 1339

HYDROGEN CHLORIDE LASERS

Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439

HYDROGEN PRODUCTION

Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
DOE/ET/15383-18 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
DOE/ET/15383-22 1364

Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454

Thermochemical Generation of Hydrogen and Oxygen from Water.
PAT-APPL-6-119 738 1454

HYDROGEN SULFIDES

Sorption of H sub 2 S on Spent Shale in Packed Beds.
DOE/LC/10020-T4 1454

HYDROGENATION

Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 162/7 1333

HYDROGRAPHIC SURVEYING

Advanced Ship System Concepts for Hydrographic Surveying.
AD-A092 374/8 1392

HYDROLOGY

Basin Development and Water Allocation,
PB81-127276 1343

Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387

HYDROLYSIS

Solubilization of Lignocellulosic Materials.
PAT-APPL-6-180 546 1338

A Mechanism for Incorporation of Carbonate into Apatite,
PB81-126104 1320

Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324

HYDROPLANING

Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
PB81-128753 1389

HYDROSTATICS

Documentation for the Ship Hydrostatics Computer Program HYDRO.
AD-A092 454/8 1393

HYDROXYLAPATITE

Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339

HYLIFE CONVERTER

Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
UCRL-15292 1419

Consistent HYLIFE Wall Design That Withstands Transient Loading Conditions.
UCRL-84271 1419

Parametric Analysis of Stress in the ICF HYLIFE Converter Structure.
UCRL-84272 1419

HYPERBARIC MEDICINE

Interaction of Drugs in the Hyperbaric Environment, Bethesda, Maryland, 13-14 September 1979. The Undersea Medical Workshop (21st),
AD-A092 451/4 1328

HYPERSONIC FLOW

Gasdynamic Particle Accelerators - An Optimization,
AD-A092 069/4 1395

HYPERSONIC TEST VEHICLES

Gasdynamic Particle Accelerators - An Optimization,
AD-A092 069/4 1395

HYPERTHERMIA

Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 288/0 1327

I-BEAM TYPE REACTORS

Proceedings of the Heavy Ion Fusion Workshop.
LBL-10301 1441

Properties of Lead-Lithium Solutions.
UCRL-84273 1419

ICF ETF And Its Engineering Development Requirements.
UCRL-84275 1419

IAEA SAFEGUARDS

Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429

ICE FOG

Ice Fog, 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801615 1350

ICE FORECASTING

New Observations on the Daily Variations of Natural Ice Albedo.

KEYWORD INDEX

PB81-132789 1350

ICE FORMATION
A New Horizontal Gradient, Continuous Flow, Ice Thermal Diffusion Chamber and Detailed Observation of Condensation-Freezing and Deposition Nucleations.
AD-A092 479/5 1294

Metoder foer Bestaemning av Halkfrekventa Vaegstraeckor (Methods for Detecting Road Sections with High Frequency of Ice Formation),
PB81-128290 1385

ICR HEATING
Wave Heating Models for Ion-Cyclotron Heating in EBT-S.
DOE/ER/53092-T2 1415

Ion Cyclotron Heating of Plasmas with Two-Ion Components.
PPPL-1713 1418

IDAHO
The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-136141 1387

IDAHO CHEMICAL PROCESSING PLANT
Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423

Calcination of Sodium-Bearing Waste Using Non-Radioactive Additives.
ENICO-1043 1424

Inventory of Calcined Waste Stored at the ICPP as of September 1979.
ENICO-1044 1424

Continuous Plutonium Monitor for Nuclear Facility off-Gas Streams.
ENICO-1054 1396

Storage and Retrievability of Existing and Future ICPP Calcines.
ENICO-1060 1424

IDAHO NATIONAL ENGINEERING LABORATORY
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

IDENTIFICATION
Effect of Response Mode on Target Identification.
AD-A092 381/3 1412

Taggants with Explosive Induced Magnetic Susceptibility.
PAT-APPL-6-181 924 1433

ILLNESSES
Illness Behavior in Mid-Life Women. Executive Summary.
PB81-125536 1309

IMAGE PROCESSING
STARAN Image Processing.
AD-A091 928/2 1353

Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354

Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354

Architecture for Higher Level Digital Image Processing.
AD-A091 994/4 1354

Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354

Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354

Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354

Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.
AD-A092 146/0 1355

Architecture for Higher Level Digital Image Processing.
AD-A092 153/6 1355

PASM: A Reconfigurable Multimicrocomputer System for Image Processing.
AD-A092 182/5 1355

Automated Reading of Videotape.
AD-A092 224/5 1355

Reprint: A Digital Image System for Atmospheric Research.
AD-A092 489/4 1356

Navy Tactical Applications Guide. Volume I. Techniques and Applications of Image Analysis,
AD-B024 969/8 1400

IMAGE RESTORATION
Reprint: Image Restoration by Short Space Spectral Subtraction.
AD-A092 298/9 1358

IMIDAZOLES
Raman and I.R. Spectra of the NH and ND Stretching Region in Polycristalline Imidazole, exp 15 N and D Substituted Analogs.
CEA-CONF-4808 1335

IMMUNE REACTIONS
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319

IMMUNITY
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319

IMMUNOLOGY
Reprint: Isolation and Characterization of Minicell-Producing Mutants and Shigella spp.
AD-A091 918/3 1317

Reprint: Immune Reactivities of Antibodies against Glycolipids.
AD-A092 002/5 1317

Reprint: Influence of Temperature on Complement-Dependent Immune Damage to Lipsomes.
AD-A092 067/6 1318

IMPACT SHOCK
Prediction of Impact Factor for Military Bridges.
PB81-130379 1386

IMPLOSIONS
NRL Inertial Confinement Fusion Theory Program 1979 Annual Report, October 1978 - December 1979.
AD-A092 470/4 1414

IMPURITIES
Impurity Ions in a Rotating Tokamak.
PPPL-1710 1434

IN-SITU GASIFICATION
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T1 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T2 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T3 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T4 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T5 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T6 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T7 1345

IN-SITU RETORTING
Preparation of Grout for Stabilization of Abandoned In-situ Oil Shale Retorts.
PAT-APPL-6-101 364 1383

INCENDIARY PROJECTILES
Development of a Lightweight 25mm Explosive Projectile.
AD-B026 541/3 1433

Rotating bands
Development of a Thin-Wall 20mm Explosive Projectile.
AD-B007 705/7 1432

INCENTIVE CONTRACTS
Incentive Contracts. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851636 1297

INCOME TAXES
Metropolitan Housing and the Income Tax,
PB81-139040 1311

INDEXES (DOCUMENTATION)
The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
PB81-122988 1299

INDIAN RESERVATIONS
CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
PB81-126039 1300

CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
PB81-126047 1300

INDIANA
Indiana Five-Year Water Resources Research and Development Plan. Fiscal Years 1982-1986.
PB81-121253 1383

INDIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

INDIUM OXIDES
Completion of a Prototype Installation for in-Line Coating by the Pyrosol Process for the Realization of Selective Glazings. Final Report.
EUR-6806-FR 1362

INDUSTRIAL DEVELOPMENT
Bereikbaarheid als Vestigingsplaatsfaktor voor Bedrijven (Attainability as a Location Factor for Industry),
PB81-125635 1300

INDUSTRIAL MEDICINE
The Toxicity of Photographic Chemicals.
AD-A091 914/2 1328

INDUSTRIAL PLANTS
A New Computer Program for Plant Layout Design - OPDEP Optimal Plant Design and Evaluation Program.
AD-A092 363/1 1390

INDUSTRIAL PRODUCTION
Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
AD-A091 964/7 1374

INERTIAL NAVIGATION
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412

Heuristic methods
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 663/7 1412

INFECTIOUS DISEASES
Comparative Histopathology of Acanthocephalan Infections in Some Freshwater Fishes.
AD-A092 258/3 1316

INFLAMMATION
Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

INFLATION (ECONOMICS)
Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency,
PB81-139032 1301

INFORMATION
Teaching the Originator to Make Whoopie.
CONF-801113-3 1298

INFORMATION CENTERS
National Resource Center Operational Feasibility and Use Study, Volume 1,
PB81-125304 1299

National Resource Center Operational Feasibility and Use Study, Volume 2, Appendix D,
PB81-125312 1299

INFORMATION EXCHANGE
Flow of Technology from the OECD to the U.S.S.R: A Feasibility Study,
AD-A092 442/3 1297

INFORMATION PROCESSING
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
AD-A092 113/0 1408

Command and control systems
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409

INFORMATION RETRIEVAL
Digital systems
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

INFORMATION SERVICES
The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
PB81-122988 1299

INFORMATION SYSTEMS
UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
AD-A092 213/8 1333

The Design, Development, Demonstration and Transfer of Advanced Command and Control (C2) Computer-Based Systems.
AD-A092 293/0 1356

Environmental Assessment Data Systems User Guide: Project Profile System.
PB81-125825 1299

Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1363

Data Bases Available at the National Bureau of Standards Library,
PB81-132870 1299

Engineering Information Systems. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855348 1299

INFORMATION THEORY
Coding
Redundant Area Coding Study.

AD-888 625/1 1358

INFRARED DETECTION
Design Considerations for the Infrared Airborne Radar (IRAR) MTI Subsystem.
AD-A091 927/4 1411

INFRARED DETECTORS
Reprint: Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source.
AD-A092 121/3 1294

Signal Processing Circuit Development.
AD-A092 371/4 1411

Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

Signal Processor for IR Sensors.
AD-B030 997/1 1411

A New Angular Displacement Transducer.
AD-C019 184/1 1396

Cooling
Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/8 1379

Photocathodes
1.06 Micrometer High Sensitivity IR Photocathode.
AD-918 930/9 1411

Television cameras
'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411

Vidicons
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411

INFRARED DOMES
Application of Statistical Fracture Criteria to the Problem of Predicting Infrared Dome Thermal Shock Failures.
AD-B028 668/2 1411

INFRARED HOMING
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

INFRARED IMAGES
Effect of Response Mode on Target Identification.
AD-A092 381/3 1412

INFRARED LASERS
Reprint: A Double-Ended, Unstable Resonator Submillimeter Laser.
AD-A092 044/7 1439

Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439

Near Infrared Gas Lasers.
AD-B036 761/5 1439

Ruggedized equipment
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

Semiconductor devices
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411

'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411

INFRARED RADIATION
A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293

INFRARED SIGNATURES
Infrared Measurement Variability Analysis.
AD-A092 068/6 1411

A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

INFRARED SURVEILLANCE
Signal Processor for IR Sensors.
AD-B030 997/1 1411

INJECTION LASERS
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411

'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411

INJECTION MOLDING
Production of Insulated Footwear Using Liquid Injection Molding Equipment. 1. Method.
AD-A091 881/3 1400

INJURY SEVERITY
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394

INLETS (WATERWAYS)
Reprint: General Morphology and Sediment Patterns in Tidal Inlets.
AD-A092 115/5 1341

INPUT OUTPUT ANALYSIS
The Detailed Input-Output Structure of the U.S. Economy: 1972. Volume II. Total Requirements for Commodities and Industries, 1972. Part I. Commodity-by-Commodity Total Requirements, 1972. Part II. Industry-by-Commodity Total Requirements, 1972.
PB81-120149 1300

INSECTICIDES
Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

INSOLATION
Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
DOE/CS/20160-01(V.5) 1362

INSTRUCTION MANUALS
Ground Controlled Approach Controller Training System (GCA-CTS) Student Guide.
AD-A091 930/8 1303

Laser Transmissometer, Installation, Alignment and Instruction Manual.
AD-A092 041/3 1395

INSTRUMENTATION
A New Angular Displacement Transducer.
AD-C019 184/1 1396

INSURANCE
Study of Liability, Insurance and Indemnification Problems for FRA Programs.
PB81-124521 1300

Insurance Coverage and Payment Policies. Rapid Turnaround Neighborhood Preservation Research. Task Number 3.
PB81-139214 1313

INTEGRAL ROCKET RAMJETS
An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456

INTEGRATED CIRCUITS
Research in Monolithic, Signal-Processing Circuits.
AD-A091 902/7 1358

Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
AD-A091 952/2 1359

Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351

Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings--Translation.
AD-A092 095/9 1351

Correlators
LSI Correlator.
AD-887 376/2 1359

LSI Correlator.
AD-900 818/6 1360

Manufacturing
LSI Correlator.
AD-890 094/6 1359

LSI Correlator.
AD-892 277/5 1360

Thermoelectricity
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360

INTEGRATED OPTICS
Magnetic Bubble Research.
AD-B002 919/9 1437

INTEGRATED SYSTEMS
Integrated Logistic Support. Implementation Guide for DoD Systems and Equipments.
AD-A092 167/6 1401

INTEGRATED THERMIONIC CIRCUITS
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360

INTERACTIVE GRAPHICS
STARAN Image Processing.
AD-A091 926/2 1353

WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356

INTERCEPTORS
Guidance and Control of Anti-Tactical Ballistic Missiles.
AD-A092 015/7 1400

INTERCOMMUNICATION SYSTEMS
Communications central
Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
AD-B000 632/0 1409

INTERFACIAL TENSION
Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts.
PB81-126161 1338

INTERFERENCE
Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

INTERIOR BALLISTICS
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435

INTERNAL WAVES
Reprint: Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.
AD-A092 327/6 1341

Reprint: Critical Layers and the Garrett-Munk Spectrum.
AD-A092 464/7 1342

INTERNATIONAL TRADE
Business America - The Journal of International Trade, Volume 3, Number 24, December 1, 1980.
PB81-124398 1300

Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.
PB81-125387 1300

Moving from Reaction to Anticipation in U.S. Import Policies.
PB81-125544 1300

INTEROPERABILITY
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400

INTERPLANETARY SPACE
Reprint: Origin of the Warped Heliospheric Current Sheet.
AD-A091 898/7 1292

INTERROGATION
Natural Language Data Base Query.
AD-A092 500/8 1302

INTERSECTION
Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas).
PB81-130775 1394

INTOR TOKAMAK
Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.
ORNL/TM-7124(Dr) 1417

INTRACRANIAL PRESSURE
Intracranial Pressure Monitoring Device.
PAT-APPL-6-163 952 1324

INTRUSION DETECTORS
MILES Pressure/Seismic Response Engineering Development of MILES Test Fixture.
AD-A092 200/5 1400

Independent Evaluation Report for Platoon Early Warning System (PEWS-IER) AN/TRS-2( ).
AD-B023 039/1 1400

Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437

INVENTORY CONTROL
Models and Techniques for Recoverable Item Stockage when Demand and the Repair Process are Nonstationary. Part I. Performance Measurement.
AD-A091 935/7 1401

A Case Study Anlaysis of a System Acquisition by a Field Activity.
AD-A092 178/3 1296

INVERSE PROBLEMS
Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

INVERSE SCATTERING PROBLEM
General Solution of Many-Channel Inverse Scattering Problem.
IFVE-OTF-79-139 1444

INVERSION
Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

INVESTMENTS
Financial Needs of Small Minority Firms.
PB81-128852 1300

IODINATION
Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325

IODINE
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
CONF-801038-4 1423

IODINE 131
Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424

Radiation Protection: An Analysis of Thyroid Blocking.

SAND-80-2148C 1327

ION BEAM TARGETS
Particle Beam Fusion Progress Report January 1979 Through June 1979.
SAND-79-1944 1418

ION BEAMS
Momentum Distribution of Ions in Plasma Beam.
AD-A092 385/4 1447

NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414

ION EXCHANGE RESINS
Ion Exchange Resins. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855306 1339

ION MICROPROBE ANALYSIS
Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
LYCEN-7868 1373

IONOSPHERE
Proceedings of the Workshop/Symposium on the Preliminary Evaluation of the Ionospheric Disturbances Associated with the HEAO-C Launch, with Applications to the SPS Environmental Assessment.
CONF-7911108- 1294

Environmental Assessment for the Satellite Power System: Concept Development and Evaluation Program - Effects of Ionospheric Heating on Telecommunications.
DOE/ER/10003-T2 1383

IONOSPHERES
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

IONOSPHERIC DISTURBANCES
Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
AD-A091 980/3 1293

Airglow
Analysis of Barium Clouds. Volume I.
AD-907 560/7 1294

IONOSPHERICS
Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855066 1294

Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294

IONS
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

IRAN
The Iranian Revolution and Its Impact on the Future of Soviet-Iranian Relations: An Assessment.
AD-A092 281/5 1302

IRIDIUM 183
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

IRON
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

IRON 57
Moossbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371

IRON ALLOYS
Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367

Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
CBPF-A0003/79 1292

Moossbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292

Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

Moossbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371

IRON ISOTOPES
Application of the Shell Model to Nuclear Spectroscopy.
DOE/TIC-11287 1444

IRRADIATION PLANTS
Design and Operation of the Sandia Pilot Plant.
SAND-80-1954C 1388

IRRIGATION
A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291

Investigation of Factors Affecting Energy for Irrigation Pumping.
PB81-127557 1291

ISOENZYMES
Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

ISOMERS
Perfluorinated Epoxides.
PAT-APPL-6-182 563 1374

ISOSTATIC PRESSING
Isostatic Pressing. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855439 1391

ISOTOPE SEPARATION
Isotopic Exchange Reactions. Kinetics and Efficiency of the Reactors Using Them in Isotopic Separation.
CEA-R-5000 1420

ISX TOKAMAK
Magnetic Fusion Experiments at Oak Ridge National Laboratory (ORNL).
DOE/TIC-11281 1416

ISX-B Neutral Beams and the Beam Target Experiment.
ORNL/TM-7452 1418

J-101 ENGINES
YJ101-YF-17 Aircraft Prototype Development Summary.
AD-B022 460/0 1455

JAPAN
Moving from Reaction to Anticipation in U.S. Import Policies.
PB81-125544 1300

JET BOMBERS
HIBAL Program Preliminary Warhead-Design. Volume I.
AD-A092 071/0 1432

HIBAL Program. Preliminary Warhead-Design. Volume II. Appendices.
AD-A092 072/8 1432

JET ENGINES
Validation of a Two-Dimensional Primitive Variable Computer Code for Flow Fields in Jet Engine Test Cells.
AD-A092 138/7 1454

JET STREAMS (METEOROLOGY)
Jet Stream. June, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-855470 1296

JOB ANALYSIS
Job Performance Aid: Job and Task Analysis.
AD-A091 979/5 1303

JOINTS (JUNCTIONS)
Nondestructive Testing of Joints. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850919 1397

Nondestructive Testing of Joints. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850927 1397

JOURNAL BEARINGS
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454

JOVIAL PROGRAMMING LANGUAGE
The Improved JCVS.
AD-923 431/1 1356

JUAN DE FUCA STRAIT
HF (High Frequency) Radar Measurements of Circulation in the Eastern Strait of Juan de Fuca Near Protection Island (July, 1979).
PB81-127490 1342

KALMAN FILTERING
Approximate Linear Regulator and Kalman Filter.
AD-A092 176/7 1376

Memory devices
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412

KALMAN FILTERS
Kalman Filters. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851081 1397

Kalman Filters. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851099 1397

Kalman Filters. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851107 1397

KARA SEA
Reprint: Freshwater and Atlantic Water in the Kara Sea.
AD-A091 965/4 1348

KENTUCKY
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Nashville Quadrangle, Tennessee, and Kentucky. Final Report.
GJBX-202(80) 1346

KEPONE
Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329

KEROSENE
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

KETAMINE HYDROCHLORIDE
Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325

KILL PROBABILITIES
HIBAL Program Preliminary Warhead-Design. Volume I.
AD-A092 071/0 1432

HIBAL Program. Preliminary Warhead-Design. Volume II. Appendices.
AD-A092 072/8 1432

KINESCOPES
Electronic recording systems
Development of a High Resolution Kinescope Recorder.
AD-922 009/6 1352

KINETIC ENERGY
Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342

KINETICS
Reprint: Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
PB81-129470 1339

KITS
Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324

KRYPTON 88
Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

LABOR
EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300

LABOR RELATIONS
A Six State Study of Impasse Procedures in the Public Sector.
PB81-130718 1307

LABORATORY ANIMALS
Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
PAT-APPL-6-195 188 1396

LABORATORY EQUIPMENT
Electric Gel Slicer.
PAT-APPL-6-174 239 1396

LAGRANGIAN FIELD THEORY
Geometric Ghosts and Unitarity.
DOE/ER/03992-413 1444

LAKE SUZANNE DAM
National Dam Safety Program. Lake Suzanne (Inventory Number N.Y. 760) Hudson River Basin, Rockland County, New York. Phase I Inspection Report.
AD-A092 220/3 1382

LAKES
A Trophic Classification of Minnesota Lakes Based on Lake Sediments.

PB81-124141 1343

LAMBDA-2250 RESONANCES
Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446

LAMINAR FLOW
Viscous Flow over Arbitrary Geometries at High Angle of Attack.
AD-A091 971/2 1438

Laminar Flow of Fluids in Pipes. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855447 1439

LAND APPLICATION
Treatment of Primary Effluent by Rapid Infiltration.
PB81-129124 1386

LAND COMBAT
The Enrichment of Smoler's Model of Land Combat.
AD-A092 196/5 1403

LAND TRANSPORTATION
Airport Ground Access Planning Guide.
AD-A092 018/1 1290

LAND USE
Overcoming Land Use Barriers to Solar Access: Solar Planning Recommendations for Local Communities.
PB81-127359 1385

LANDING AIDS
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287

LANDING FIELDS
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290

LANTHANUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

LARGE SCALE INTEGRATED CIRCUITS
LSI Correlator.
AD-900 818/6 1360

LASER BEAMS
Design Study for Ground-Based Atmospheric Lidar System.
AD-A091 955/5 1292

Reprint: Some Physical Insights into Beam Propagation in Strong Turbulence.
AD-A092 004/1 1440

Reprint: Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions.
AD-A092 051/2 1440

Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

NRL Inertial Confinement Fusion Theory Program 1979 Annual Report, October 1978 - December 1979.
AD-A092 470/4 1414

Studies of Transient Discharges.
AD-A092 482/9 1437

LASER CAVITIES
Unstable-Resonator and Output-Coupling Design Study for Diffraction Radiation Generator Near-Millimeter Sources.
AD-A092 502/4 1439

LASER COMMUNICATIONS
Pulse communications
Advanced Modulator II.
AD-922 519/4 1409

LASER FUSION REACTORS
Properties of Lead-Lithium Solutions.
UCRL-84273 1419

ICF ETF And Its Engineering Development Requirements.
UCRL-84275 1419

LASER IMPLOSIONS
Laser Fusion Studies at NRL.
NRL-MR-4350 1417

LASER-PRODUCED PLASMA
Recent Laser-Plasma Interaction Experiments at the Lawrence Livermore National Laboratory.
UCRL-83794 1419

LASER PRODUCED PLASMAS
NRL Inertial Confinement Fusion Theory Program 1979 Annual Report, October 1978 - December 1979.
AD-A092 470/4 1414

LASER RADIOBIOLOGY
Reprint: Retinal Thermal Injury.
AD-A092 466/2 1326

LASER SAFETY
Laser Safety Computer Program.
AD-B032 525/8 1439

LASER SPECTROSCOPY
Reprint: The Lowest Laser-Raman Active Accordion (ALR) Type Oscillations in Crystalline Polymers.
PB81-126187 1339

LASER TARGET DESIGNATORS
The SOTAS-Scout-AAH/HELLFIRE System.
AD-A092 147/8 1288

Semiconductor lasers
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439

LASER TARGET INTERACTIONS
MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.
AD-A092 266/6 1304

MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.
AD-A092 267/4 1304

MAGLAD. Trainer Engineering Report Demonstration Results.
AD-A092 477/9 1305

LASER TARGETS
Doppler Velocimeter for Laser Accelerated Targets.
NRL-MR-4319 1417

Laser Fusion Studies at NRL.
NRL-MR-4350 1417

Preheat Studies on Laser Ablatively-Accelerated Foils.
NRL-MR-4356 1417

Metallic Coating of Microspheres.
UCRL-84463 1420

Recent Advances in Pt Coating of Microspheres by a Batch Magnetron Sputtering Process.
UCRL-84478 1420

LASER WELDING
An Economic and Technical Study on the Feasibility of Using Advanced Joining Techniques in Constructing Critical Naval Marine Structures.
AD-A092 299/7 1390

Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

LASERS
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439

Laser Transmissometer, Installation, Alignment and Instruction Manual.
AD-A092 041/3 1395

A 20 Years' Survey of Laser Science and Technology in China. II--Translation.
AD-A092 097/5 1439

LATTICE FIELD THEORY
Characterization of the Higgs Phase in Lattice Gauge Theories.
DESY-79/72 1443

LAUNCH VEHICLES
Electrostatic fields
Titan Vehicle Electrostatic Environment.
AD-913 898/3 1457

LAUNCHING
Reflexive Launch Strategies.
AD-A092 300/3 1400

LEACHING
Reconnaissance Study of Leachate Quality from Raw Mined Oil Shale - Laboratory Columns.
PB81-129017 1386

LEAD
Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

LEAD 208 TARGET
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

LEAD ALLOYS
Properties of Lead-Lithium Solutions.
UCRL-84273 1419

LEAD PAINT POISONING
Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
PB81-139370 1374

Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F),
PB81-139388 1374

LEAD TIME
The Study of Production Leadtime Forecasting Models.
AD-A091 970/4 1390

LEADERSHIP
Old Theories versus Changing Environment,
AD-A091 951/4 1308

Seminar on Transition and Leadership for Newly-Elected Mayors. Final Report on Fall, 1977 Program.
PB81-138984 1307

LEARNING
Analogical Processes in Learning.
AD-A092 233/6 1308

Decision Flexibility in a Learning Environment.
AD-A092 498/5 1309

LEASING
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,
PB81-139016 1310

LEFT VENTRICULAR ASSIST DEVICE
Development and Evaluation of a Long-Term Low Profile Intracorporeal (Abdominal) Left Ventricular Assist Device (THI E-Type ALVAD) Fascicle I.
PB81-131773 1324

LEGIONELLA PNEUMOPHILA
Reprint: Survival of Legionella pneumophila in Aerosols: Effect of Relative Humidity.
AD-A091 897/9 1317

Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318

A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
AD-A092 286/4 1318

The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
AD-A092 287/2 1318

LEGISLATION
Resource Conservation and Recovery Act (RCRA). January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851024 1363

LEPTONS
Normalizing the Renormalization Group in Deep Inelastic Leptoproduction. CTP No. 878.
CONF-800724-44 1443

Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446

LESSONS LEARNED
Lessons Learned, Headquarters, Fort Buckner.
AD-845 654/3 1403

Lessons Learned, Headquarters, 63D Signal Battalion.
AD-845 655/0 1403

Lessons Learned, 4-68. Communications and Electronics Lessons Learned.
AD-855 117/8 1403

Lessons Learned, Headquarters, 93rd Engineer Battalion.
AD-855 273/9 1403

Lessons Learned, Headquarters, 36th Engineer Battalion.
AD-855 322/4 1403

Lessons Learned, Headquarters, 164th Aviation Group.
AD-855 356/2 1403

Lessons Learned, Headquarters, 299th Engineer Battalion.
AD-855 547/6 1403

Lessons Learned, Headquarters, 169th Engineer Battalion.
AD-855 561/7 1403

Lessons Learned, Headquarters, 3D Battalion,506th Infantry.
AD-855 651/6 1403

Lessons Learned, Headquarters, I Corps Tactical Zone Signal Group.
AD-855 695/3 1403

Lessons Learned, Headquarters, 84th Engineer Battalion.
AD-855 900/7 1403

Lessons Learned, Headquarters, 588th Engineer Battalion.
AD-855 901/5 1403

Lessons Learned, Headquarters, 31st Engineer Battalion.
AD-856 079/9 1403

Lessons Learned, Headquarters, 20th Engineer Battalion.

AD-856 118/5 1404
Lessons Learned, Headquarters, 577th Engineer Battalion.
AD-856 164/9 1404
Lessons Learned, Headquarters, 116th Engineer Battalion.
AD-856 367/8 1404
Lessons Learned, Headquarters, 46th Engineer Battalion.
AD-856 713/3 1404
Lessons Learned Review of the HQ USEUCOM Command Center Project.
AD-856 745/5 1404
Lessons Learned, Headquarters, 34th General Support Group.
AD-856 914/7 1404
Lessons Learned, Headquarters, 92nd Engineer Battalion.
AD-857 032/7 1404
Lessons Learned, Headquarters, 165th Aviation Group.
AD-857 128/3 1404
Lessons Learned, Headquarters, 160th Signal Group.
AD-857 482/4 1404
Lessons Learned, Headquarters, 815th Engineer Battalion (Construction).
AD-857 603/5 1404
Lessons Learned, Headquarters, 64th Quartermaster Battalion.
AD-858 376/7 1404
Lessons Learned, Headquarters, 394th Transportation Battalion.
AD-858 543/2 1404
Lessons Learned, Headquarters, 972d Signal Battalion.
AD-858 938/4 1404
Lessons Learned, Headquarters, U. S. Army Depot Long Binh.
AD-858 944/2 1404
Lessons Learned, Headquarters, United States Army, Pacific.
AD-858 945/9 1404
Lessons Learned, Headquarters, 184th Ordnance Battalion (Ammo).
AD-859 175/2 1404
Lessons Learned, Headquarters, 125th Transportation Command.
AD-859 256/0 1404
Lessons Learned, Headquarters, 70th Engineer Battalion.
AD-859 267/7 1404
Lessons Learned, Headquarters, 2d Logistical Command.
AD-859 278/4 1404
Lessons Learned, Headquarters 4th Transportation Command.
AD-859 308/9 1404
Lessons Learned, Headquarters, 809th Engineer Battalion (Construction).
AD-859 333/7 1404
Lessons Learned, Headquarters, Army Depot, Cam Ranh.
AD-859 337/8 1404
Lessons Learned, Headquarters, 79th Engineer Group, (Construction).
AD-859 379/0 1404
Lessons Learned, Headquarters, 24th Transportation Battalion (Terminal).
AD-859 381/6 1404
Lessons Learned, Headquarters, 14th Transportation Battalion.
AD-859 526/6 1404
Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
AD-859 530/8 1404
Lessons Learned, Headquarters, U. S. Army Depot, Qui Nhon.
AD-859 531/6 1404
Lessons Learned, Headquarters, 124th Transportation Command (Terminal A).
AD-859 596/9 1405
Lessons Learned, Headquarters, 35th Engineer Group (Construction).
AD-859 837/7 1405
Lessons Learned, Headquarters 44th Engineer Group (Construction).
AD-859 902/9 1405
Lessons Learned, Headquarters 507th Transportation Group (Movement Control).
AD-859 903/7 1405
Lessons Learned, Headquarters, 538th Engineer Battalion.
AD-859 909/4 1405
Lessons Learned, Headquarters, 864th Engineer Battalion (Construction).
AD-859 926/8 1405
Lessons Learned, Headquarters, U. S. Army Headquarters Area Command.
AD-859 944/1 1405
Lessons Learned, Headquarters, Da Nang Signal Battalion.
AD-860 083/5 1405
Lessons Learned, Headquarters, 9th Logistical Command.
AD-860 216/1 1405
Lessons Learned, Headquarters, 44th Medical Brigade.
AD-860 217/9 1405
Lessons Learned, Headquarters, 63rd Signal Battalion (Army).
AD-860 218/7 1405
Lessons Learned, Headquarters, 20th Engineer Battalion.
AD-860 344/1 1405
Lessons Learned, Headquarters, 31st Engineer Battalion.
AD-860 345/8 1405
Lessons Learned, Headquarters, 34th Engineer Battalion.
AD-860 346/6 1405
Lessons Learned, Headquarters, 35th Engineer Battalion.
AD-860 347/4 1405
Lessons Learned, Headquarters, USASTRATCOM Facility Nha Trang.
AD-860 348/2 1303
Lessons Learned, Headquarters, 68th Medical Group.
AD-860 461/3 1405
Lessons Learned, Headquarters, 84th Engineer Battalion.
AD-860 632/9 1405
Lessons Learned, Headquarters, 41st Signal Battalion.
AD-860 678/2 1405
Lessons Learned, Headquarters, Phu Lam Signal Battalion.
AD-860 742/6 1405
Lessons Learned, Headquarters, 165th Aviation Group.
AD-861 029/7 1405
Lessons Learned, Headquarters, 62d Engineer Battalion.
AD-861 030/5 1405
Lessons Learned, Headquarters, 34th Engineer Group.
AD-861 031/3 1405
Lessons Learned, Headquarters, 43d Signal Battalion.
AD-861 032/1 1405
Lessons Learned, Headquarters, 36th Signal Battalion.
AD-861 033/9 1405
Lessons Learned, Headquarters, 52d Signal Battalion.
AD-861 474/5 1405
Lessons Learned, Headquarters, 3d Surgical Hospital.
AD-861 493/5 1405
Lessons Learned, Headquarters, 3d Field Hospital.
AD-861 494/3 1406
Lessons Learned, Headquarters, US Army Regional Communications Group (Vietnam).
AD-861 495/0 1406
Lessons Learned, Headquarters, 1st Signal Brigade (USASTRATCOM).
AD-861 496/8 1406
Lessons Learned, Headquarters, 45th Surgical Hospital.
AD-861 505/6 1406
Lessons Learned, Headquarters, 29th Evacuation Hospital.
AD-861 512/2 1406
Lessons Learned, Headquarters, 29th Signal Group.
AD-861 521/3 1406
Lessons Learned. Headquarters, 19th Engineer Battalion (Combat).
AD-861 529/6 1406
Lessons Learned. Headquarters, 27th Engineer Battalion (Combat).
AD-861 530/4 1406
Lessons Learned. Headquarters, 12th Signal Group.
AD-861 531/2 1406
Lessons Learned. Headquarters, 2nd Civil Affairs Company.
AD-861 532/0 1406
Lessons Learned. Headquarters, US Army STRATCOM Long Lines Battalion North.
AD-861 536/7 1406
Lessons Learned, Headquarters, 40th Signal Battalion (Construction).
AD-861 633/6 1406
Lessons Learned, Headquarters, 70th Engineer Battalion.
AD-861 634/4 1406
Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
AD-861 636/9 1406
Lessons Learned, Headquarters, 169th Engineer Battalion.
AD-861 670/8 1406
Lessons Learned, Headquarters, 86th Engineer Battalion.
AD-861 777/1 1406
Lessons Learned, Headquarters, 538th Engineer Battalion.
AD-861 827/4 1406
Lessons Learned, Headquarters, 519th Transportation Battalion.
AD-861 828/2 1406
Lessons Learned, Headquarters, 29th Civil Affairs Company.
AD-861 834/0 1406
Lessons Learned, Headquarters, 41st Civil Affairs Company.
AD-861 915/7 1406

LEUKEMIA
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319

LEVEES
Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387

LEXICOGRAPHY
Natural Language Data Base Query.
AD-A092 500/8 1302

LI-DRIFTED GE DETECTORS
Determination of Fano's Factor in Semiconductors.
INIS-mf-5648 1451

LI-DRIFTED SI DETECTORS
Determination of Fano's Factor in Semiconductors.
INIS-mf-5648 1451

LIABILITIES
Study of Liability, Insurance and Indemnification Problems for FRA Programs.
PB81-124521 1300

LIABILITY INSURANCE
Study of Liability, Insurance and Indemnification Problems for FRA Programs.
PB81-124521 1300

LIBRARY COLLECTIONS
An Inventory to the Records of the 1977 South Carolina International Women's Year Conference.
ED-183 154 1298
A Guide to Dutch Manuscripts Relating to New Netherland in United States Repositories,
ED-183 170 1298

LIBRARY INSTRUCTION MANUALS
On-Site Library Training Program for School and Community in an Economically and Culturally Deprived County.
ED-183 162 1298

LIBRARY PROGRAMS
Planning Library Programs,
ED-183 163 1298
A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
ED-183 169 1298

LIDAR
Design Study for Ground-Based Atmospheric Lidar System.
AD-A091 955/5 1292

LIFE CYCLE COSTS
Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978.
AD-A092 043/9 1454

LIFE EXPECTANCY
Lifetime Prediction of Organic Coating/Metal System.
AD-A092 382/1 1368

LIFE RAFTS
Inflatable Liferaft Stability Study.
AD-A091 986/0 1323

LIFE SUPPORT SYSTEMS
Air Saturation Dive 4 - 8 February 1980, CEDD Test Number 1-80.
AD-A092 368/0 1328

LIGHT EMITTING DIODES
New Passivation Methods of GaAs.
AD-A092 354/0 1450

LIGHT MODULATORS
Dynamic range
Advanced Modulator II.
AD-922 519/4 1409

LIGHT NUCLEI
Polarized Proton Radiative Capture Studies of Giant Resonances.

DOE/ER/01388-454 1443

Application of the Shell Model to Nuclear Spectroscopy.
DOE/TIC-11287 1444

LIGHT RAIL TRANSIT
Light Rail Application and Design,
PB81-124620 1384

LIGHT SCATTERING
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293

LIGHT TRANSMISSION
Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293

Reprint: Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions.
AD-A092 051/2 1440

LIGHT WATER REACTORS
Light Water Reactor Safety Research Program. Volume 14.
NUREG/CR-1469-V-14 1428

LIGNOCELLULOSE
Solubilization of Lignocellulosic Materials.
PAT-APPL-6-180 545 1338

LIMESTONE
Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388

LIMITERS
Material Selection for TFTR Limiters.
PPPL-1719 1418

LINEAR ACCELERATORS
SLAC Linear Collider Conceptual Design Report.
SLAC-229 1441

LINEAR ARRAYS
A Study of Filled and Sparse Line Array Beamformers.
AD-A092 367/2 1407

LINEAR PROGRAMMING
Generating Weather Data for Linear Weapons Allocation Models.
AD-B021 970/9 1377

LINEAR SYSTEMS
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

LIPIDS
Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316

LIPOSOMES
Reprint: Influence of Temperature on Complement-Dependent Immune Damage to Lipsomes.
AD-A092 087/6 1318

LIQUID METALS
Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

LIQUIDS
Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts,
PB81-126161 1338

LITHIUM
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

LITHIUM 6
Study of Structure of Nuclei with Neutrons and Nuclear Data Measurements for MFE. Progress Report, September 1, 1978-August 31, 1980.
DOE/ER/02490-1 1443

LITHIUM 7
Study of Structure of Nuclei with Neutrons and Nuclear Data Measurements for MFE. Progress Report, September 1, 1979-August 31, 1980.
DOE/ER/02490-1 1443

LITHIUM ALLOYS
Properties of Lead-Lithium Solutions.
UCRL-84273 1419

LMFBR TYPE REACTORS
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427

Developments in Sensitivity Theory.
CONF-800942-10 1430

Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429

Failure Analysis of Carbide Fuels under Transient Overpower (TOP) Conditions.
HEDL-SA-2006-FP 1429

State Variable Description of 316 SS Post-Irradiation Mechanical Properties.
HEDL-SA-2174 1429

SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
ORNL/CSD-53 1428

Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

LOADERS
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432

LOCAL GOVERNMENT
Seminar on Transition and Leadership for Newly-Elected Mayors. Final Report on Fall, 1977 Program.
PB81-138984 1307

LOFT REACTOR
Response of LOFT SPNDs to Reactor Coolant Density Variations During a LOCA Simulation.
CONF-801107-1 1427

LOGIC CIRCUITS
Arithmetic units
Magnetic Bubble Research.
AD-B002 919/9 1437

LOGISTICS
Department of Defense Materiel Distribution System Study. Volume I. Executive Summary.
AD-B029 883/6 1401

Department of Defense Materiel Distribution System Study. Volume II. Technical report.
AD-B029 884/4 1401

Department of Defense Materiel Distribution System Study. Volume III. Book 1, Optimization Model Run Index.
AD-B029 885/1 1401

Department of Defense Materiel Distribution System Study. Volume III, Book 2. Appendices A, B and C.
AD-B029 886/9 1401

Department of Defense Materiel Distribution System Study. Volume III. Book 3. Appendix D-1. Data Base Development.
AD-B029 887/7 1402

Department of Defense Materiel Distribution System Study. Volume III, Book 4. Appendix D-2, Data Aggregation.
AD-B029 888/5 1402

Department of Defense Materiel Distribution System Study. Volume 3, Book 5. Appendix D-3. Depot Cost and Capacity.
AD-B029 889/3 1402

Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 6. Appendix D-4, Transportation.
AD-B029 890/1 1402

Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 7. Appendix D-5, Models.
AD-B029 891/9 1402

Department of Defense Materiel Distribution System Study (DODMDS). Volume III. Book 8, Appendices E, F, and G.
AD-B029 892/7 1402

LOGISTICS MANAGEMENT
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323

A Case Study Anlaysis of a System Acquisition by a Field Activity.
AD-A092 176/3 1296

Manufacturing Methods and Technology Program Accomplishments,
AD-A092 262/5 1390

Exchange Service Station Gasoline Pumping Operation Simulation.
AD-A092 278/1 1378

Pre-Expended Bin Material Management at Naval Air Rework Facilities.
AD-A092 319/3 1401

LOGISTICS PLANNING
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401

LOGISTICS SUPPORT
Integrated Logistic Support. Implementation Guide for DoD Systems and Equipments.
AD-A092 167/6 1401

LOOKOVER LAKE DAM
National Dam Safety Program. Lookover Lake Dam (NJ00565), Hudson River Basin, Longhouse Brook, Passaic, County, New Jersey. Phase I Inspection Report.
AD-A092 218/7 1381

LOSS OF COOLANT
Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
CONF-801102-1 1427

Experimental Determination of Lower Plenum ECC Injection Effectiveness.
CONF-801102-12 1427

LOSSES
Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455

LOW INCOME GROUPS
Multifamily Property Utilization Task Force.
PB81-139131 1312

LOW-LEVEL RADIOACTIVE WASTES
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

LOW LOSS
Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

LOW PASS FILTERS
Reprint: An Approach to Programmable CTD Filters Using Coefficients 0, + 1, and -1.
AD-A091 877/1 1358

LUBRICANTS
Sliding Contact Lubricants. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855215 1373

Sliding Contact Lubricants. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855223 1373

LUBRICATION
Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
AD-A092 289/8 1373

LUMBER
Effect of Cross Grain on Stress Waves in Lumber.
AD-A091 949/8 1374

Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
AD-A091 964/7 1374

Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291

Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375

LUMBERING
Skyline Harvesting in Appalachia.
PB81-134173 1291

LUMINESCENT DOSIMETERS
Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

LUNGS
Effects of Effluents of Coal Combustion and Gasification Upon Lung Structure and Function. Annual Report.
DOE/MC/11284-T2 1328

LUTETIUM
Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

LUTETIUM 175 TARGET
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

LWBR TYPE REACTORS
Successive Collision Calculation of Resonance Absorption (AWBA Development Program).
WAPD-TM-1468 1430

M-714 FUZES
XM714 Delay Fuze Tests.
AD-B024 828/6 1433

M-735 PROJECTILES
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436

MACH BOX METHOD
A Finite Element Mach Box Procedure for Flutter Predictions of Panels in Three-Dimensional Supersonic Unsteady Potential Flow.
AD-B017 944/0 1438

Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
AD-894 188/2 1438

MACHINE CODING
A Congeries of Numerical Models used at the BRL.
AD-A091 886/2 1434

Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.

AD-A092 395/3 1408

MACHINE TOOLS
Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
AD-A092 365/6 1391

Technology of Machine Tools. Volume 3. Machine Tool Mechanics.
UCRL-52960-3 1392

MAGNESIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

MAGNESIUM 24 REACTIONS
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

MAGNETIC BUBBLES
Magnetic Bubble Research.
AD-B002 919/9 1437

MAGNETIC DISKS
Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
AD-A091 957/1 1353

MAGNETIC DOMAINS
Bubbles
Magnetic Bubble Research.
AD-B002 919/9 1437

MAGNETIC FIELD CONFIGURATIONS
Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
PB81-850943 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850950 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850968 1448

MAGNETIC FIELDS
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
AD-A091 933/2 1359

Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411

MAGNETIC MIRROR CONFIGURATIONS
Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
DOE/ET/53087-2 1448

MAGNETIC MIRROR TYPE REACTORS
National Mirror Fusion Program Plan.
UCAR-10042-80 1419

MAGNETIC MIRRORS
National Mirror Fusion Program Plan.
UCAR-10042-80 1419

MAGNETIC SEPARATION
Magnetic Separation of Materials. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855231 1391

Magnetic Separation of Materials. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855249 1391

MAGNETOHYDRODYNAMICS
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

MAGNETOSPHERE
Reprint: A Test of Two Theories for the Low-Frequency Cutoffs of Nonthermal Continuum Radiation.
AD-A092 086/8 1293

MAINTENANCE
Maintenance Productivity.
AD-A092 250/0 1296

Infrared Thermometry and the Telatemp 44 as a Ship System Maintenance Monitoring Tool.
AD-B018 764/1 1393

Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384

MAINTENANCE MANAGEMENT
Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304

MAINTENANCE PERSONNEL
Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section I. Automotive Maintenance.
AD-A950 104/0 1434

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section II. Turret Maintenance.
AD-A950 105/7 1434

MAIZE
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

Organization of the R Chromosome Region in Maize. Triennial Report.
DOE/EV/01300-45 1316

MALFUNCTIONS
Region V's Guidance for Developing a State Malfunction Notification and Correction Program,
PB81-125601 1384

MALIGNANT NEOPLASMS
Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325

Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329

MAN COMPUTER INTERFACE
Division Real Time Applications Report (DIVRAS), Software Functional Description.
AD-A092 067/8 1354

Design and Implementation of an Integrated Screen-Oriented Text Editing and Formatting System.
AD-A092 180/9 1297

MAN MACHINE SYSTEMS
Errors in Human Performance.
AD-A091 925/8 1308

Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287

The Effects of the Direction of Control Loading on a One-Dimensional Tracking Task.
AD-A092 459/7 1288

MANAGEMENT
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

Study of Loan Management Operations.
PB81-139248 1301

MANAGEMENT BY OBJECTIVES
Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
AD-A092 054/6 1296

MANAGEMENT INFORMATION SYSTEMS
Functional Capabilities Description (FCD) for the Corps Information Management System (CIMS).
AD-A092 070/2 1297

Documentation--INFO: A Small Computer Data Base Management System for School Applications. The Illinois Series on Educational Application of Computers, No. 24e,
ED-183 199 1299

MANAGEMENT PLANNING AND CONTROL
Software Project Forecasting,
AD-A091 923/3 1353

1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

Maintenance Productivity.
AD-A092 250/0 1296

Program Planning and Appraisal Methodology.
AD-B027 872/1 1297

MANAGEMENT SYSTEMS
Documentation--A Computerized Instructional Resource Management System. The Illinois Series on Educational Application of Computers. No. 26e,
ED-183 200 1306

MANGANESE
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

MANGANESE COMPOUNDS
Pulse Radiolysis of Fast Reactions in Molecular Systems. Progress Report, November 1979-September 1980.
DOE/ER/01763-T1 1336

MANGANESE FLUORIDES
Relaxation Rates of Electronic and Nuclear Magnons in Antiferromagnetic Materials.
INIS-mf-5643 1451

MANPOWER UTILIZATION
Maintenance Productivity.
AD-A092 250/0 1296

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume I.
PB81-123424 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume II.
PB81-123432 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System.
PB81-123440 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Systems Users Manual.
PB81-123457 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. System Operations Manual.
PB81-123465 1306

MANUAL OPERATION
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

MANUALS
Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1363

MANUFACTURING
Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
AD-A091 988/6 1431

Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
AD-A092 078/5 1351

Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351

Manufacturing Methods and Technology Program Plan, CY 1980.
AD-A092 243/5 1390

Manufacturing Methods and Technology Program Accomplishments,
AD-A092 262/5 1390

Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851909 1297

MAPLE TREES
Carbohydrate Levels in Current-year Shoots of Sugar Maple.
PB81-134199 1291

MAPPING
Data processing
Photo-Carto Interface.
AD-893 054/7 1340

Expanded Phase I ACS Experiments. Volume I. Experimental System Testing and Evaluation.
AD-893 139/6 1340

Expanded Phase I ACS Experiments. Volume II. Design Requirements for a Prototype Cartographic Finishing Subsystem.
AD-893 140/4 1340

MARINE BIOLOGICAL NOISE
Reprint: Click Sounds from Animals at Sea.
AD-A092 064/5 1340

MARINE BIOLOGY
California's Salmon Resource - Its Biology, Use and Management.
PB81-134041 1340

Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340

MARINE ENGINEERING
Program Manual NSUP.
AD-A092 474/6 1393

Time-Domain Method for Computing Forces and Moments Acting on Three Dimensional Surface-Piercing Ship Hulls with Forward Speed.
AD-A092 475/3 1393

MARINE FISHES
Reprint: Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
PB81-120685 1340

Reprint: Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
PB81-120768 1317

Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
PB81-132052 1323

On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.

PB81-132094 1340

MARINE SURFACE PROPULSION
Dynamic Hull and Propeller Interaction Factors for FF-1052 Predicted from Quasi-Steady Model Experiments.
AD-A091 890/4 1392

Correlation of Model Experiments with Ship Powering Data for Three Tankers Represented by Models 9006, 9007, 9008, and 9009.
AD-A091 940/7 1392

MARINE TRANSPORTATION
An Analysis of the Problems Involved in the Utilization of Merchant Shipping to Support the U.S. Government during Declared Mobilization Situations.
AD-A092 421/7 1401

MARKOV PROCESSES
An Approach to Regenerative Simulation on a General State Space.
AD-A092 221/1 1376

MARTENSITIC TRANSFORMATION
The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
AD-A092 247/6 1369

MARYLAND
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

MASERS
Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351

MASS SPECTROMETERS
A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
AD-A092 148/6 1456

Gas Surface Dynamics, High Power Laser-Solid Interactions.
AD-A092 183/3 1333

MASS SPECTROMOTERS
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

MASS SPECTROSCOPY
Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331

Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

Reprint: The Dissociation Energies of Gaseous Praseodymium- and Neodymium-Monoxides and Their Structure.
AD-A092 488/6 1334

Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
AD-A092 497/7 1335

MATERIALS HANDLING
Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855553 1391

MATERIALS HANDLING EQUIPMENT
Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855553 1391

MATHEMATICAL FILTERS
Speech Algorithm Optimization at 16 KBPS.
AD-A092 010/8 1407

Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376

MATHEMATICAL MODELS
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

A Congeries of Numerical Models used at the BRL.
AD-A091 886/2 1434

Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
AD-A091 964/7 1374

Viscous Flow over Arbitrary Geometries at High Angle of Attack,
AD-A091 971/2 1438

Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293

Gasdynamic Particle Accelerators - An Optimization,
AD-A092 069/4 1395

Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

On Schur Optimality.
AD-A092 185/8 1376

Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408

A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

Detailed Modelling of Combustion Systems.
AD-A092 234/4 1452

Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288

Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342

An Investigation of Appendage Drag,
AD-A092 353/2 1392

QUANTA - Users Manual.
AD-A092 379/7 1403

Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455

Application of Numerical Optimization to Drive Shaft Design.
AD-A092 400/1 1391

Reprint: Migration Models for Polymer Additives,
PB81-126146 1323

Fragmentation ammunition
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435

Fragmentation warheads
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435

MATHEMATICAL PREDICTION
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342

Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452

MATRICES (MATHEMATICS)
On Schur Optimality.
AD-A092 185/8 1376

Construction of PBIB Designs with Triangular and L2 Schemes.
AD-A092 190/8 1376

Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376

MATRIX TECHNIQUE
Reprint: Calculations of Electron Beam Spreading in Composite Thin Foil Targets,
PB81-126070 1338

MAXIMUM ENTROPY METHOD
A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358

MAXIMUM LIKELIHOOD ESTIMATION
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377

MEASUREMENT
Calculation of the Oxide Growth Rate of 2-1/4 Cr - 1 Mo Steel in Air and the Subsequent Measurement of the Strain Required to Crack the Oxide.
AD-A092 302/9 1370

Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396

Reprint: The Dissociation Energies of Gaseous Praseodymium- and Neodymium-Monoxides and Their Structure.
AD-A092 488/6 1334

MEASURING INSTRUMENTS
Reprint: Instrument for Determining Depth of Dehydration of Frozen Fish,
PB81-120727 1323

MECHANICAL HEARTS
Development and Evaluation of a Long-Term Low Profile Intracorporeal (Abdominal) Left Ventricular Assist Device (THI E-Type ALVAD) Fascicle I.
PB81-131773 1324

MECHANICAL PROPERTIES
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
AD-A091 945/6 1369

Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
AD-A092 365/6 1391

MEDICAID
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
PB81-124687 1320

MEDICAL EQUIPMENT
Blood Gas Analyzer System.
PAT-APPL-6-157 380 1324

Intracranial Pressure Monitoring Device.
PAT-APPL-6-163 952 1324

MEDICAL PERSONNEL
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume I.
PB81-123424 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume II.
PB81-123432 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System.
PB81-123440 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Systems Users Manual.
PB81-123457 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. System Operations Manual.
PB81-123465 1306

MEDICAL SCHOOLS
Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
PB81-133365 1307

MEETINGS
Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980,
PB81-120081 1350

Dimensional Co-ordination in Building (Comhordu Toiseach.san bhFoirgniocht).
PB81-122509 1394

Cadmium Seminar 1980, Proceedings Held at the Lake Palace Hotel, Udaipur on 26 February 1980.
PB81-124109 1372

Ultrasonic Materials Characterization.
PB81-124984 1396

Postharvest Food Losses in Sri Lanka; Report of a Workshop, 11-16 February 1980.
PB81-129975 1323

Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
PB81-132557 1317

MELTING
Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

MELTS
Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts,
PB81-126161 1338

MEMORY DEVICES
Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
AD-A091 952/2 1359

Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
AD-A091 957/1 1353

Microwave Frequency Memory,
AD-A092 104/9 1354

MENIERES DISEASE
Reprint: Further Remarks on the Mechanism Producing the Symptoms of Meniere's Disease.
AD-A092 046/2 1317

MENTALLY HANDICAPPED
A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
ED-183 169 1298

MERCHANT MARINE
An Analysis of the Problems Involved in the Utilization of Merchant Shipping to Support the U.S. Government during Declared Mobilization Situations.
AD-A092 421/7 1401

MERCURY
Control, Decontamination and Disposal of Mercury.
AD-A092 453/0 1328

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

MERCURY BROMIDE LASERS
Investigation of Plasma Processes in Electronic Transition Lasers.

KEYWORD INDEX

AD-A091 903/5 1439

MERCURY COMPOUNDS
HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450

MESSAGE PROCESSING
Functional Capabilities Description (FCD) for the Corps Information Management System (CIMS).
AD-A092 070/2 1297

METAL COATINGS
Lifetime Prediction of Organic Coating/Metal System.
AD-A092 382/1 1368

METAL COMPLEXES
Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373

Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331

METAL FIBERS
Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437

METAL FILMS
Reprint: Thin Zinc Films on Aluminum,
PB81-126203 1368

METAL INDUSTRY
High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428

METAL NITRIDE OXIDE SEMICONDUCTORS
Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
AD-A091 952/2 1359

METAL OXIDE SEMICONDUCTORS
New Passivation Methods of GaAs.
AD-A092 354/0 1450

METAL SHEETS
Sheet Metal Forming. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855454 1391

METAL WORKING
Sheet Metal Forming. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855454 1391

METALS
Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370

Mechanism for Diffusion Induced Grain Boundary Migration.
DOE/ER/05002-13 1370

Group Representation of Bicrystal Invariant Translations with an Application to the Topology of Secondary Grain Boundary Dislocations.
DOE/ER/05002-14 1370

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329

Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329

Nonlinear Kinematic Hardening under Non-Proportional Loading.
RISO-R-408 1372

METEORITES
Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292

Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
CBPF-A0003/79 1292

Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292

METEOROLOGICAL DATA
The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
AD-A092 217/9 1294

Reprint: A Digital Image System for Atmospheric Research.
AD-A092 489/4 1356

METEOROLOGICAL INSTRUMENTS
In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295

METEOROLOGICAL PHENOMENA
The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
AD-A092 217/9 1294

METEOROLOGICAL RADAR
Evaluation of a Meteorological Airborne Pulse Doppler Radar.
AD-A092 276/5 1412

Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
AD-A092 318/5 1413

Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295

Reprint: Frequency Dependence of Slant Path Rain Attenuations at 15 and 35 GHZ.
AD-A092 505/7 1413

METEOROLOGICAL SATELLITES
Satellite Measurements of Atmospheric Aerosols.
AD-A092 152/8 1293

The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
AD-A092 217/9 1294

Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

METEOROLOGY
Analysis of Baseline Data from Federally Leased Oil Shale Tracts in Colorado and Utah.
DOE/EV/70031-5 1383

METHANE
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

Evaluation of Data Gathered from Unminable Coal Seams. Final Report.
DOE/MC/10641-T1 1345

Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
PB81-125189 1338

Mobile Ambient Air Monitor.
RFP-3010 1398

METHANE SULFONANISIDIDE/ (ACRIDINYLGAMINO)
Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331

MLTHODOLOGY
Manufacturing Methods and Technology Program Plan, CY 1980.
AD-A092 243/5 1390

METHOTREXATE
Separation of Triphenylphosphine Oxide from Methotrexate Ester and Purification of Said Ester.
PAT-APPL-6-143 129 1338

METHYL HYDRAZINES
Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
AD-A092 249/2 1328

METHYL IODIDE
Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424

METRIC SYSTEM
Reprint: Units, Physical,
PB81-121824 1396

MEXICO GULF
Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340

MFTF DEVICES
MFTF-Progress and Promise.
UCRL-85002 1420

MHD GENERATOR AEDC
MHD High Performance Demonstration Experiment. Quarterly Progress Report, January 1-March 31, 1980.
FE-2895-8 1366

MHD POWER PLANTS
MHD Air Heater Development Technology. Progress Report, November 26, 1979-March 31, 1980.
DOE/ET/15602-T1 1364

Operational Analysis of Open-Cycle MHD. Final Report.
EPRI-AP-1463 1366

MICE
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319

Genetic and Developmental Study of a Complex Locus in the House Mouse. Progress Report, 1979-1980.
COO-4159-6 1316

MICROCOMPUTERS
PASM: A Reconfigurable Multimicrocomputer System for Image Processing.
AD-A092 182/5 1355

Dynamic Linking in a Microcomputer Environment.
AD-A092 404/3 1356

Radiation Evaluation of the AM2901A Microprocessor.
AD-A092 415/9 1356

Diagnostic Software Development for a Real-Time Spectral Analysis System.
AD-A092 441/5 1356

MICROEMULSION FLOODING
Low Interfacial Tension and Miscibility Studies for Surfactant Tertiary Oil Recovery Processes. Annual Report, December 1, 1978-November 30, 1979.
DOE/BC/10007-8 1344

MICROFICHE
Data storage systems
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

MICROPALEONTOLOGY
Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343

MICROPROCESSORS
Design of a System Initialization Mechanism for a Multiple Microcomputer.
AD-A092 137/9 1354

Considerations for an Assembler Scheduled Multi-Microprocessor System.
AD-A092 216/1 1355

Use of a Microprocessor to Implement an ADCCP Protocol (Federal Standard 1003).
AD-A092 272/4 1408

Radiation Evaluation of the AM2901A Microprocessor.
AD-A092 415/9 1356

MICROSCOPY
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

MICROSPHERES
Metallic Coating of Microspheres.
UCRL-84463 1420

MICROSTRUCTURE
Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
AD-A092 253/4 1367

MICROWAVE AMPLIFIERS
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

MICROWAVE EQUIPMENT
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412

MICROWAVE NETWORKS
A Netted Search Radar System.
PAT-APPL-6-185 469 1413

MICROWAVE POWER TRANSMISSION
Environmental Assessment for the Satellite Power System: Concept Development and Evaluation Program - Effects of Ionospheric Heating on Telecommunications.
DOE/ER/10003-T2 1383

MICROWAVE TUBES
Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351

MICROWAVES
Discrete Scattering Approach to Vegetation Modeling.
AD-A092 017/3 1452

Microwave Frequency Memory,
AD-A092 104/9 1354

A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293

MILITARY AIRCRAFT
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288

MILITARY APPLICATIONS
Concepts for Utilization of Video Discs in Military Applications.
AD-A092 029/8 1398

Functional Capabilities Description (FCD) for the Corps Information Management System (CIMS).
AD-A092 070/2 1297

Millimeter Wave Radar Applications to Weapons Systems.

AD-B012 103/8 1413

MILITARY ASSISTANCE
Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349

MILITARY COMMANDERS
Preliminary Outline of Tank Commander Duties and Tasks for US/FRG MBT-70.
AD-A950 108/1 1434

MILITARY CONSTRUCTION
Wood Products Used in Military Construction in the United States - 1962 and 1978.
AD-A092 022/3 1374

MILITARY FORCES (FOREIGN)
The Modernization of the Chinese People's Liberation Army: Goals and Problems.
AD-A092 422/5 1400

MILITARY MEDICINE
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 1--Translation.
AD-A092 090/0 1318

Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 2--Translation.
AD-A092 091/8 1318

Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 3--Translation.
AD-A092 092/6 1318

Experience of Soviet Medicines in a Great Patriotic War, 1941-1945. Volume 16, Section 4--Translation.
AD-A092 093/4 1318

MILITARY PROCUREMENT
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400

MILITARY REQUIREMENTS
Spacecraft Charging Standard Report.
AD-A091 953/0 1456

MILITARY RESEARCH
AGARD Index of Publications, 1977 - 1979.
AD-A092 125/4 1402

MILITARY STRATEGY
An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
AD-A092 405/0 1399

MILITARY TRANSPORTATION
SES Multi-Purpose Ship Study. Transport Application. Volume 1. Technical Summary.
AD-A091 948/0 1392

Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 6. Appendix D-4, Transportation.
AD-B029 890/1 1402

MILL TAILINGS
Radioecological Investigations of Uranium Mill Tailings Systems. Progress Report, September 1, 1979-September 30, 1980.
DOE/EV/10305-1 1426

Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426

MILLIMETER WAVES
Reprint: Spectral Domain Analysis of Dominant and Higher Order Modes in Fin-Lines.
AD-A092 120/5 1351

Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351

Millimeter Wave Radar Applications to Weapons Systems.
AD-B012 103/8 1413

MINE ACID DRAINAGE
Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387

MINE HAULAGE
Noise Reduction of Chain Conveyors. Volume I.
PB81-130833 1348

MINE LIGHTING
An Interactive Computer System for Evaluating Coal Mine Illumination.
PB81-125528 1348

MINE SAFETY
Steering System Survey for Surface Mining Equipment.
PB81-130866 1348

MINE WATERS
Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387

MINERALS
Effect of Thermal Neutron Irradiation on the Elastic Moduli and Structure of Boron-Containing Crystals. Final Report for the Period 1 October 1976-30 September 1979.
IAEA-R-1800-F 1450

MINIMUM WAGE
The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
PB81-126732 1307

Exemptions to the Fair Labor Standards Act - Transportation Sector.
PB81-127441 1307

MINING
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300

MINING EQUIPMENT
Marketing of Coal Mining Equipment. Evaluation of Present Techniques: Suggestions to Aid Commercialization. Final Report.
DOE/RA/20014-T1 1345

Steering System Survey for Surface Mining Equipment.
PB81-130866 1348

MINORITY ENTERPRISES
Financial Needs of Small Minority Firms.
PB81-128852 1300

MIRRORS
Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370

MISCIBLE-PHASE DISPLACEMENT
Basic Studies in the Recovery of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1979-August 31, 1979.
DOE/BC/10083-1 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, December 1, 1979-February 29, 1980.
DOE/BC/10083-7 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, March 1980-May 31, 1980.
DOE/BC/10083-8 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1980-August 31, 1980.
DOE/BC/10083-9 1344

MISSISSIPPI
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Tupelo Quadrangle, Mississippi, Alabama, and Tennessee. Final Report.
GJBX-203(80) 1345

MISSOURI
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Memphis Quadrangle, Arkansas, Missouri, and Tennessee. Final Report.
GJBX-178(80) 1346

MIXER-SETTLERS
Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

MOBILE HEALTH UNITS
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321

MODE LOCKED LASERS
Space communications
Advanced Modulator II.
AD-922 519/4 1409

MODELS
Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323

Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308

Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392

A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
ED-183 169 1298

MODEMS
Performance of ANDVT HF Modem with Peak Clipping.
AD-A092 114/8 1408

MODULAR CONSTRUCTION
Display systems
Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
AD-B004 191/3 1290

MODULATORS
Demodulators
Testing of 19.2 KB/S MODEM.
AD-894 759/0 1360

MOLECULAR BEAMS
Gas Surface Dynamics, High Power Laser-Solid Interactions.
AD-A092 183/3 1333

Photoelectron Photoion Molecular Beam Spectroscopy.
LBL-11434 1337

MOLECULAR CONFIGURATION
Reprint: Configurational Properties of Star-Branched Polymers,
PB81-126195 1339

MOLECULAR LASERS
Investigation of Plasma Processes in Electronic Transition Lasers.
AD-A091 903/5 1439

Gas Surface Dynamics, High Power Laser-Solid Interactions.
AD-A092 183/3 1333

MOLECULAR STRUCTURE
Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332

Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

Molecular Fraction Behavior in Oriented Polymers.
AD-A092 241/9 1373

MOLECULAR VIBRATION
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333

Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333

MOLECULE MOLECULE INTERACTIONS
Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Syntheeis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

MOLYBDENUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

MOLYBDENUM ALLOYS
Ultrasonic Measurement of Elastic Moduli of 17-4 pH Stainless Steel and Uranium -2 Molybdenum from -40 exp 0 C to 800 exp 0 C.
SAND-80-1121 1372

MOLYBDENUM COMPOUNDS
Calculation of the Oxide Growth Rate of 2-1/4 Cr - 1 Mo Steel in Air and the Subsequent Measurement of the Strain Required to Crack the Oxide.
AD-A092 302/9 1370

MOLYBDENUM FLUORIDES
Extrapolation to the U-F System from the Mo-F System.
K/ET-594 1337

MONITORING
The Need for Airport Noise Monitoring Systems. Their Uses, and Value in Promoting Civil Aviation.
AD-A092 240/1 1290

MONITORS
A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
NUREG/CR-1761 1422

Blood Gas Analyzer System.
PAT-APPL-6-157 380 1324

Intracranial Pressure Monitoring Device.
PAT-APPL-6-163 952 1324

MONOLITHIC STRUCTURES (ELECTRONICS)
Research in Monolithic, Signal-Processing Circuits.
AD-A091 902/7 1358

MONTANA
Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
DOE/CS/20160-01(V.5) 1362

The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
PB81-138158 1387

MORGAN LAKE DAM
National Dam Safety Program. Morgan Lake Dam (Inventory Number NY-787), Hudson River Basin,

KEYWORD INDEX

Dutchess County, New York. Phase I Inspection Reprot,
AD-A092 039/7 1381

MORONE SAXATILIS
Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay,
PB81-131765 1317

MORTGAGES
Study of Loan Management Operations.
PB81-139248 1301

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
PB81-139271 1301

Study to Indentify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part II: Appendix 1, Home Owner Questionnaire.
PB81-139289 1301

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part III: Appendix 2, Lending Institution Questionnaire.
PB81-139297 1301

MOTION
Reprint: Sand Motion Initiation by Water Waves: Two Asymptotes.
AD-A092 045/4 1341

MOTIVATION
Old Theories versus Changing Environment,
AD-A091 951/4 1308

MOTOR VEHICLE ACCIDENTS
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394

MOTOR VEHICLE OPERATORS
A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385

Yrkesfoerarutbildningen Infoer 1980-Talet. Resultat fran Gruppdiskussioner med Laerare Inom Yrkesfoerarutbildningen Inom Gymnasieskola och Arbetsmarknadsutbildning (Profesional Driver Training for the 1980's. Opinions and Experiences of Professional Driver Teachers),
PB81-128472 1307

Bus Driver Training Simulator Assessment.
PB81-128977 1307

MOTOR VEHICLES
Propagation of Traffic Noise.
PB81-123523 1389

Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
PB81-128753 1389

MOUNT BEACON RESERVOIR
National Dam Safety Program. Mt. Beacon Reservoir (Inventory Number NY-26), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 038/9 1381

MOUNT SAINT HELENS
Abstracts of Ongoing NSF Research Related to the Eruption of Mt. St. Helens.
PB81-132045 1343

MOVING TARGET INDICATORS
Design Considerations for the Infrared Airborne Radar (IRAR) MTI Subsystem.
AD-A091 927/4 1411

MULTICHANNEL
Optimization of Multichannel Processing.
AD-A091 987/8 1358

Multi-Tone Jammer.
PAT-APPL-6-181 940 1410

MULTIFAMILY HOUSING
Study of Loan Management Operations.
PB81-139248 1301

MULTIPLE OPERATION
Multi-Sensor Detection Study.
AD-A091 954/8 1358

MULTIPLY HANDICAPPED
A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
ED-183 189 1298

MULTIPROCESSORS
Design of a System Initialization Mechanism for a Multiple Microcomputer.
AD-A092 137/9 1354

PASM: A Reconfigurable Multimicrocomputer System for Image Processing.
AD-A092 182/5 1355

Considerations for an Assembler Scheduled Multi-Microprocessor System.
AD-A092 216/1 1355

Detailed Design of the Kernel of a Real-Time Multiprocessor Operating System.
AD-A092 301/1 1356

MULTIVARIATE ANALYSIS
Some Extensions of the Nerlove-Press Model.
AD-A091 946/4 1375

Multi-Sensor Detection Study.
AD-A091 954/8 1358

Distributions of Some Matrix Variates and Latent Roots in Multivariate Behrens-Fisher Discriminant Analysis.
AD-A091 960/5 1375

Assessing Risks through the Determination of Rare Event Probabilities.
AD-A092 192/4 1376

UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
AD-A092 213/8 1333

State Space Models for Gaussian Stochastic Processes.
AD-A092 388/8 1377

MUNICIPAL SERVICES
Urban Housing with Discrete Structures,
PB81-139057 1311

MUNICIPALITIES
National Municipal Policy and Strategy for Construction Grants, NPDES Permits, and Enforcement Under the Clean Water Act.
PB81-130783 1386

Water Availability for the City of Lamar, Colorado.
PB81-130965 1386

MUON-NUCLEON INTERACTIONS
Open and Hidden Charm Muoproduction.
LBL-11561 1446

MUONS
Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
INIS-mf-5649 1444

MYDRIACYL
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325

MYDRIATICS
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325

MYOCARDIAL INFARCTIONS
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321

N TYPE SEMICONDUCTORS
Power FET Contact Technology.
AD-A092 320/1 1351

NALOXONE
Reprint: Experimental Endotoxin Shock: The Pathophysiologic Function of Endorphins and Treatment with Opiate Antagonists.
AD-A091 919/1 1317

Reprint: Naloxone Alteration of Physiological Parameters in Spinally Transected Animals.
AD-A092 340/9 1325

Reprint: Opiate-Like Effects of Electroconvulsive Shock in Rats: A Differential Effect of Naloxone on Nociceptive Measures.
AD-A092 341/7 1325

NAND GATES
Burn-In of Uncased Semiconductors. A Feasibility Study.
AD-A092 076/9 1351

NANTICOKE CREEK SITE 10 DAM
National Dam Safety Program. Nanticoke Creek Watershed Project Site 10 Dam (Inventory I.D. Number NY 713, DEC 85D-3946, Susquehanna River Basin, Broome County, New York, Phase I Inspection Report,
AD-A092 036/3 1380

NATIONAL BUREAU OF STANDARDS
Data Bases Available at the National Bureau of Standards Library,
PB81-132870 1299

NATIONAL GOVERNMENT
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297

NATO
AGARD Index of Publications, 1977 - 1979.
AD-A092 125/4 1402

NATURAL GAS
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

NATURAL GAS DEPOSITS
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

NATURAL GAS LIQUIDS
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

NATURAL LANGUAGE
Natural Language Data Base Query.
AD-A092 500/8 1302

NAVAL BUDGETS
A Study of Budget Formulation in the Fleet Marine Force.
AD-A092 401/9 1296

NAVAL EQUIPMENT
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323

NAVAL INTELLIGENCE
Navy Tactical Applications Guide. Volume I. Techniques and Applications of Image Analysis,
AD-B024 969/8 1400

NAVAL PERSONNEL
Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
AD-A092 275/7 1304

RTC CREDO: Initial Assessment.
AD-A092 280/7 1304

NAVAL PLANNING
Guidance and Control of Anti-Tactical Ballistic Missiles.
AD-A092 015/7 1400

NAVAL RESEARCH
Summaries of Research, Fiscal Year 1980.
AD-A092 232/8 1318

NAVAL RESEARCH LABORATORIES
Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
AD-A092 469/6 1396

NAVAL TRAINING
An Evaluation of the Application of ISD to P-3 Pilot Training.
AD-A092 126/2 1304

Computer-Managed Instruction in the Navy. I. Research Background and Status.
AD-A092 481/1 1305

NAVIGATION
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412

NAVIGATION CHARTS
Reprint: Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
AD-A092 001/7 1340

NAVIGATION COMPUTERS
Accuracy
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412

NAVIGATION SATELLITES
Results of the Solar Cell Experiments aboard the NTS-2 Satellite after 811 Days in Orbit.
AD-A092 438/1 1363

NEIGHBORHOODS
Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment,
PB81-139313 1313

Workshop on Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment. Workshop Framework and Paper Subjects,
Pb81-139321 1313

NEODYMIUM
Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

NEODYMIUM LASERS
Harmonic generators
Advanced Modulator II.
AD-922 519/4 1409

NEON 20 REACTIONS
Complete Fusion exp 20 Ne + exp 12 C at 110 MeV.
ISN-78-26 1445

NEOPINONE
Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331

NEPTUNIUM 237 TARGET
Dynamical Aspect of Fission Mechanism. Study of the exp 237 Np(N,F) Reaction Induced by Neutron Energies Between 0.5 and 1.75MeV.
CENBG-7809 1442

NEPTUNIUM FLUORIDES
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

NEPTUNYL COMPOUNDS
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

NETHERLANDS
Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator)--Translation.
PB81-125650 1309

NETWORK ANALYSIS (MANAGEMENT)
Final Technical Report, 15 September 1975-14 July 1980,
AD-A091 989/4 1378

NETWORK FLOWS
POSER - A Process Organisation to Simplify Error Recovery,
AD-A092 103/1 1354

NEUTRAL BEAM SOURCES
Implications of Tritium in Neutral Beam Injectors.
CONF-800427-19(Dr) 1414

Negative Deuterium Ions for Tandem Mirror Next Step and Tandem Mirror Reactors.
UCRL-84888 1420

NEUTRINO-ELECTRON INTERACTIONS
Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
INIS-mf-5649 1444

NEUTRON FLUENCE
Neutronics Calculations for the TFTR Neutron Calorimeter.
PPPL-1695 1418

NEUTRON FLUX
Operation PLUMBBOB. Project 41.3. Effects of Altitude on Neutron Measurements.
AD-B951 742/6 1421

NEUTRON MONITORS
Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441

NEUTRON REACTIONS
Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441

Data Formats and Procedures for the Evaluated Nuclear Data File, ENDF.
BNL-NCS-50496(Ed.2) 1441

Dynamical Aspect of Fission Mechanism. Study of the exp 237 Np(N,F) Reaction Induced by Neutron Energies Between 0.5 and 1.75MeV.
CENBG-7809 1442

Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

Status of the Nuclear Data Library KEDAK-3. July 1979.
KFK-2386/I 1445

Systematics of S- and P-Wave Radiation Widths.
LA-UR-80-2702 1423

GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
ORNL/TM-7341 1446

NEUTRON-RICH ISOTOPES
Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
HEDL-SA-2227-FP 1444

NEUTRONS
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326

NEVADA
Geology of the Colado Geothermal Area, Pershing County, Nevada.
DOE/ID/12079-8 1343

Evaluation of HEW - Assisted Programs to the Hispanic Population of Clark County, Nevada.
PB81-125726 1309

NEW JERSEY
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

NEW MEXICO
Meteological and Air Quality Data, Quarterly Report. WIPP Site: Eddy County, New Mexico. Autumn Quarter, September 1977-November 1977.
SAND-80-7121 1425

NEW YORK
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

Study of the State Mining Industry of Vermont/New York.
PB81-128936 1300

NICKEL
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Contribution to Research on the Elastic and Elastoplastic Behavior of Porous Materials.
CEA-R-5006 1373

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391

NICKEL ALLOYS
An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367

Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
CBPF-A0003/79 1292

Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292

Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368

NIOBIUM
Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

NIOBIUM ALLOYS
Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

NITRATES
Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
AD-A092 419/1 1334

Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
AD-B040 437/6 1331

NITRIC OXIDE
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335

Mobile Ambient Air Monitor.
RFP-3010 1398

NITRIDES
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368

NITROCELLULOSE
Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
AD-B040 437/6 1331

NITROGEN DIOXIDE
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335

NITROGEN ISOTOPES
Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
DOE/ER/05031-2 1336

NITROGEN OXIDES
Mobile Ambient Air Monitor.
RFP-3010 1398

NITROUS OXIDE
Production of Nitrous Oxide in a Rocket Motor Exhaust.
AD-A091 893/8 1380

NOISE EXPOSURE
Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388

NOISE LEVELS
Propagation of Traffic Noise.
PB81-123523 1389

Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388

NOISE POLLUTION
Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388

NOISE REDUCTION
A Guidance Document on Airport Noise Control.
AD-A092 228/6 1290

Acoustical Deverberator.
PATENT-4 225 954 1407

Noise Reduction of Chain Conveyors. Volume I.
PB81-130833 1348

NOISE (SOUND)
Propagation of Traffic Noise.
PB81-123523 1389

NONDESTRUCTIVE TESTING
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

NONDESTRUCTIVE TESTS
Nondestructive Testing of Joints. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850919 1397

Nondestructive Testing of Joints. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850927 1397

Nondestructive Testing of Fractures. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851784 1398

Nondestructive Testing of Fractures. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851792 1398

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851800 1398

Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
PB81-851818 1398

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-851826 1398

Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851834 1398

NONLINEAR ANALYSIS
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454

NONLINEAR FILTERING
Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376

NONLINEAR SYSTEMS
Propagation, Scattering, and Reflection of Waves in Continuous and Random Inhomogeneous Media, and Nonlinear Boundary Value Problems.
AD-A092 062/9 1436

Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376

A Composite Algorithm for Mixed Integer Constrained Nonlinear Optimization.
AD-A092 435/7 1378

NORETHINDRONE ENANTHATE/METHYL
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
PAT-APPL-6-172 086 1325

NORTH ATLANTIC OCEAN
Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341

Reprint: Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
PB81-120768 1317

NORTH CAROLINA
Water Resources in North Carolina.
PB81-127318 1343

NOSE TIPS
Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340

NOZZLELESS ROCKET ENGINES
An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456

NOZZLES
BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking: Resolution of Generic Technical Activity A-10.

NUREG-0619-REV-1 1428

NUCLEAR BOMBS

Operation WIGWAM. Project 4.1. Weapons Placement at Operation WIGWAM.
AD-B951 738/4 1402

Operation WIGWAM. Project 4.2. Weapons Assembly.
AD-B951 739/2 1402

NUCLEAR DATA COLLECTIONS

Status of the Nuclear Data Library KEDAK-3. July 1979.
KFK-2386/I 1445

GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
ORNL/TM-7341 1446

NUCLEAR EXPLOSION DAMAGE

Operation GREENHOUSE. Scientific Director's Report. Annex 3.0. The Test of Structures.
AD-B951 735/0 1421

NUCLEAR EXPLOSION SIMULATION

A Near-Surface Burst EMP Driver Package for Neutron-Induced Sources.
AD-A091 908/4 1421

NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
AD-A091 939/9 1421

FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
AD-A092 143/7 1421

Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
AD-A092 229/4 1454

NUCLEAR EXPLOSION TESTING

Operation GREENHOUSE. Scientific Director's Report. Annex 3.0. The Test of Structures.
AD-B951 735/0 1421

Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1,
AD-B951 736/8 1426

NUCLEAR EXPLOSIONS

Spectral Ratios for Explosions in Salt.
AD-A091 911/8 1349

Late Time Containment.
AD-A092 214/6 1421

Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342

Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

NUCLEAR FACILITIES

Index to the AEC/ERDA/DOE Air Cleaning Conferences.
CONF-801038-3 1426

Computer Code to Assess Accidental Pollutant Releases.
DP-1552 1426

Calculation of Particulate Dispersion in a Design-Basis Tornadic Storm from the Atomics International Nuclear Material Development Facility, Santa Susana, California.
DP-1566 1426

CMB-8 Material Balance System.
LA-8194-M 1430

Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426

NUCLEAR FUELS

Spent Nuclear Fuel Recovery. May, 1972-February, 1980 (Citations from the NTIS Data Base).
PB81-850687 1430

NUCLEAR MATTER

Monotonous Braking of High Energy Hadrons in Nuclear Matter.
JINR-E-1-12086 1445

NUCLEAR MEDICINE

Annual Progress Report, July 1, 1979-June 30, 1980.
UCLA-12-1253 1322

NUCLEAR POWER PLANTS

A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
NUREG/CR-1761 1422

Development and Testing of a Model for Fire Potential in Nuclear Power Plants.
NUREG/CR-1819 1422

Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429

NUCLEAR PUMPING

Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439

NUCLEAR REACTION KINETICS

Nuclear Excitations and Reaction Mechanisms. Progress Report, 1 November 1979-30 September 1980.
DOE/ER/03235-1 1444

Workshop on Nuclear Dynamics.
LBL-10688 1445

NUCLEAR REACTIONS

Applied Nuclear Data Research and Development. Progress Report, April 1-June 30, 1980.
LA-8524-PR 1445

NUCLEAR REACTOR SAFETY

Light Water Reactor Safety Research Program. Volume 14.
NUREG/CR-1469-V-14 1428

NUCLEAR STRUCTURE

Problem of Phase Transitions in Nuclear Structure.
BNL-28357 1442

Nuclear Excitations and Reaction Mechanisms. Progress Report, 1 November 1979-30 September 1980.
DOE/ER/03235-1 1444

NUCLEAR THEORY

Synthesis of Quantum Chromodynamics and Nuclear Physics.
SLAC-PUB-2595 1446

NUCLEAR WEAPON DEBRIS

Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1,
AD-B951 736/8 1426

NUCLEAR WEAPONS

Keynote Address at the International Conference on Nuclear Waste Transmutation.
BNL-28193 1423

STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421

NUCLEATION

A New Horizontal Gradient, Continuous Flow, Ice Thermal Diffusion Chamber and Detailed Observation of Condensation-Freezing and Deposition Nucleations.
AD-A092 479/5 1294

Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

NUCLEI

Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
JINR-R-1-12125 1445

Synthesis of Quantum Chromodynamics and Nuclear Physics.
SLAC-PUB-2595 1446

NUCLEONS

Normalizing the Renormalization Group in Deep Inelastic Leptoproduction. CTP No. 878.
CONF-800724-44 1443

NUCLEOSIDES

Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338

NUMERICAL ANALYSIS

Harwell Subroutine Library. A Catalogue of Subroutines (1973).
AD-A092 033/0 1375

Harwell Subroutine Library. A Catalogue of Subroutines (1973). Supplement Number 2.
AD-A092 034/8 1375

Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342

NUMERICAL METHODS AND PROCEDURES

Application of Numerical Optimization to Drive Shaft Design.
AD-A092 400/1 1391

NURSING

Reprint: Nursing Introspection: Peer Review.
AD-A092 467/0 1319

NUTRITION

Federally-Supported Human Nutrition Research, Training, and Education: Update for the 1980s. I. Human Nutrition Research and Training.
PB81-128944 1321

NYLON FIBERS

Nylon Products. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855405 1374

NYLON PRODUCTS

Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855413 1390

OCCUPATIONAL DISEASES

Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

OCEAN BOTTOM

Reprint: Seafloor and Near-Surface Sound Velocities from Barents Sea Sonobuoy Data.
AD-A091 966/2 1436

Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348

OCEAN BOTTOM TOPOGRAPHY

Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349

OCEAN CIRCULATION

Reprint: Recent Observations of a Large Eddy in the Gulf of Alaska,
PB81-120719 1342

OCEAN CURRENTS

Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341

Reprint: Geostrophic Vorticity Balance in Midocean.
AD-A092 080/1 1341

Reprint: Eddies Off the Somali Coast During the Southwest Monsoon.
AD-A092 324/3 1341

A Comparison Study and Software Implementation of NORDA Ocean Models.
AD-A092 424/1 1341

Reprint: Recent Observations of a Large Eddy in the Gulf of Alaska,
PB81-120719 1342

HF (High Frequency) Radar Measurements of Circulation in the Eastern Strait of Juan de Fuca Near Protection Island (July, 1979).
PB81-127490 1342

OCEAN ENVIRONMENTS

Satellite Measurements of Atmospheric Aerosols.
AD-A092 152/8 1293

Low Frequency Geomagnetic Fluctuations (.04 to 25 Hz) on Land and on the Floor of Monterey Bay.
AD-A092 399/5 1411

OCEAN SURVEILLANCE

Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407

OCEAN WAVES

Influence of Wave Refraction on Coastal Geomorphology-Bull Island to Isle of Palms, South Carolina.
AD-A091 913/4 1341

Reprint: Critical Layers and the Garrett-Munk Spectrum.
AD-A092 464/7 1342

Ocean Wave Spectra. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851354 1342

OCEANOGRAPHERS

University Curricula in the Marine Sciences and Related Fields. Academic Years 1969-70 and 1970-71.
AD-A092 026/4 1304

OCEANOGRAPHIC DATA

Bathymetric Data Reduction System.
AD-A091 942/3 1348

Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340

OCEANOGRAPHY

University Curricula in the Marine Sciences and Related Fields. Academic Years 1969-70 and 1970-71.
AD-A092 026/4 1304

OCEANS

Seasonal Variability in the Intermediate Waters of the Eastern North Atlantic.
AD-A091 937/3 1341

Reprint: On Production and Dissipation of Thermal Variance in the Oceans.
AD-A092 486/0 1349

OCTUPOLAR CONFIGURATIONS

High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

Lower Hybrid Heating Associated with Mode Conversion on the Wisconsin Toroidal Octupole.
DOE/ET/53051-10 1447

OFFICER PERSONNEL

An Attempt to Model the USN Unrestricted Line Officer Promotion Process Using an Adapted Length of Service Markov Model.
AD-A092 403/5 1305

OIL POLLUTION

Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340

OIL SANDS

Tar Sand Extraction by Steam Stimulation and Steam Drive: Measurement of Physical Properties.
DOE/LETC/TPR-80-1761 1345

OIL SHALE

Reconnaissance Study of Leachate Quality from Raw Mined Oil Shale - Laboratory Columns.

PB81-129017 1386

OIL SHALE PROCESSING PLANTS
Speciation of Trace Organic Ligands and Inorganic and Organometallic Compounds in Oil Shale Process Waters.
LBL-11167 1454

OIL WELLS
Low Interfacial Tension and Miscibility Studies for Surfactant Tertiary Oil Recovery Processes. Annual Report, December 1, 1978-November 30, 1979.
DOE/BC/10007-8 1344

Basic Studies in the Recovery of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1979-August 31, 1979.
DOE/BC/10083-1 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, December 1, 1979-February 29, 1980.
DOE/BC/10083-7 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, March 1980-May 31, 1980.
DOE/BC/10083-8 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1980-August 31, 1980.
DOE/BC/10083-9 1344

Development and Field Testing of a Process for Recovering Heavy Crude Oil in the Carlyle Pool-Allen County, Kansas Using the Vapor Therm Generator. Final Report.
DOE/BETC-2880-1 1344

OILS
Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325

Improved Electrostatic Coalescense System with Independent AC and DC Hydrophilic Electrodes.
PAT-APPL-6-110 738 1337

OKLAHOMA
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Fort Smith Quadrangle, Oklahoma, and Arkansas. Final Report.
GJBX-200(80) 1346

ON LINE SYSTEMS
The OCLC Serials Sub-System: A First Evaluation.
ED-183 161 1298

ONT EXPLOSIVE
A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432

ONTOGENESIS
Genetic and Developmental Study of a Complex Locus in the House Mouse. Progress Report, 1979-1980.
COO-4159-6 1316

OPERATING SYSTEMS (COMPUTERS)
Dynamic Linking in a Microcomputer Environment.
AD-A092 404/3 1356

OPERATIONS RESEARCH
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
AD-A092 155/1 1309

An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
AD-A092 203/9 1309

Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851008 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851016 1388

OPERATORS (PERSONNEL)
Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator)--Translation.
PB81-125650 1309

OPTICAL COMMUNICATIONS
Laser Light Fiber Communication--Translation.
AD-A092 096/7 1407

OPTICAL COUPLERS
Optical Couplers.
AD-B009 489/6 1440

OPTICAL DETECTION
Automatic Bandwidth Control System.
PAT-APPL-6-185 472 1412

OPTICAL DETECTORS
Satellite Measurements of Atmospheric Aerosols.
AD-A092 152/8 1293

Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

P+ N Gallium Phosphide Photodiodes.
PAT-APPL-6-185 471 1352

OPTICAL EQUIPMENT
Hybrid circuits
Magnetic Bubble Research.
AD-B002 919/9 1437

OPTICAL EQUIPMENT COMPONENTS
Failure Rates for Fiber Optic Assemblies.
AD-A092 315/1 1440

OPTICAL IMAGES
Handbooks
Handbook of Underwater Imaging System Design.
AD-904 472/8 1409

OPTICAL LENSES
Development of a Two-Piece Mask and Lens and Mold for Same.
AD-A092 380/5 1326

OPTICAL PYROMETERS
Infrared Thermometry and the Telatemp 44 as a Ship System Maintenance Monitoring Tool.
AD-B018 764/1 1393

OPTICAL SCANNING
Dynamic Color Scanner System.
AD-B015 629/9 1352

OPTICAL TARGET DESIGNATORS
Television guidance
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411

'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411

OPTIMIZATION
Optimization of Multichannel Processing.
AD-A091 987/8 1358

A Composite Algorithm for Mixed Integer Constrained Nonlinear Optimization.
AD-A092 435/7 1378

ORAL CONTRACEPTIVES
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
PAT-APPL-6-172 086 1325

ORAL DISEASES
Toluidine Blue Rinse for the Detection of Squamous Carcinoma of the Oral Cavity and Other Structures Composition and Method.
PAT-APPL-6-105 079 1325

ORBITAL SOLAR POWER PLANTS
Proceedings of the Workshop/Symposium on the Preliminary Evaluation of the Ionospheric Disturbances Associated with the HEAO-C Launch, with Applications to the SPS Environmental Assessment.
CONF-7911108- 1294

Environmental Assessment for the Satellite Power System: Concept Development and Evaluation Program - Effects of Ionospheric Heating on Telecommunications.
DOE/ER/10003-T2 1383

Environmental Impacts of the Satellite Power System (SPS) On the Middle Atmosphere.
DOE/ER/10035-01 1383

ORDNANCE
Storage
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 684/2 1433

ORDNANCE STEEL
Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.
AD-A092 344/1 1435

ORGANIC ACIDS
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

ORGANIC CHEMISTRY
Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 182/7 1333

ORGANIC SOLVENTS
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

ORGANIZATIONAL STRUCTURE
Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
PB81-133365 1307

Determinants and Effects of Organizational Strategies of Control Directed at Quality of Care in Organized Ambulatory Care Settings.
PB81-133613 1322

ORGANOMETALLIC COMPOUNDS
Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332

Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

Lifetime Prediction of Organic Coating/Metal System.
AD-A092 382/1 1368

Speciation of Trace Organic Ligands and Inorganic and Organometallic Compounds in Oil Shale Process Waters.
LBL-11167 1454

ORTHOPHOTOGRAPHY
Photographic printers
Off-Line Orthographic Printer.
AD-919 575/1 1399

OSCILLATORS
Microwave Frequency Memory,
AD-A092 104/9 1354

Reprint: Space Applications of Superconductivity: Resonators for High Stability Oscillators and Other Applications.
PB81-119844 1353

OUTER CONTINENTAL SHELVES
Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340

OVERTIME
The Overtime Pay Provisions of the Fair Labor Standards Act,
PB81-132243 1300

OXAMNIQUINE
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

OXYGEN
Study of the Kinetics of Oxygen Redistribution in UOsub(2+ X) and UCeO sub 2 Due to a Temperature Gradient.
CEA-R-5020 1336

OXYGEN 16 REACTIONS
Analysis of a Quasi-Molecular Type Dissociation Involving Three Charged Fragments. Observation and Discussion of the Production of alpha Particles at Rest from the exp 12 C- alpha - exp 12 C Structure.
CENBG-7919 1442

Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443

OXYGEN 16 TARGET
Delta -Nucleus Interactions. CTP No. 887.
CONF-800863-3 1443

OXYGEN EQUIPMENT
Evaluation of the Scott Aviox Emergency Oxygen System during a Rapid Decompression to 25,000 Feet,
AD-A092 204/7 1323

OXYGEN GENERATORS
Evaluation of the Scott Aviox Emergency Oxygen System during a Rapid Decompression to 25,000 Feet,
AD-A092 204/7 1323

OXYGEN ISOTOPES
Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
DOE/ER/05031-2 1336

OXYGEN ORGANIC COMPOUNDS
Bis(Dihydroxymethyloxoimidazolidiny()Alkanes.
PAT-APPL-6-180 544 1369

OZONE
Disinfection of Viruses in Water by Ozone.
AD-A092 252/6 1318

Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
AD-A092 268/2 1328

Mobile Ambient Air Monitor.
RFP-3010 1398

P TYPE SEMICONDUCTORS
On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

PACIFIC NORTHWEST REGION
Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
DOE/CS/20160-01(V.5) 1362

PACKAGING
Evaluation/Redesign of the F-105 Pitch Rate Gyro Pack,

KEYWORD INDEX

AD-A092 109/8 1412

Packaging Machines. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855371 1391

PACKET COMMUNICATIONS
Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

PACKETS
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
AD-A092 113/0 1408

Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

PAGING
Mobile Telephone and Paging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855355 1410

PAINTING
MC Painting Manual A: User's Guide. The Illinois Series on Educational Applications of Computers, No. 33. Revised Edition,
ED-183 201 1306

PAKISTAN
The Security of Pakistan: A Trip Report.
AD-A092 156/9 1302

PALLADIUM 109
Unique Parity States in exp 109 Pd as a Test of Particle-Rotor and IBFA Models.
BNL-28305 1442

PALLADIUM ALLOYS
Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372

PAPER INDUSTRY
Industrial Cogeneration Case Study No. 3: Mead Corporation Paper Mill, Kingsport, Tennessee.
ANL/CNSV-TM-42 1364

Development of a Chemical Toxicity Assay for Pulp Mill Effluents.
PB81-126369 1339

PARALYSIS
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319

PARAMETERS
Measurement of Performance Parameters for a FLIR Thermal Imaging System.
AD-A092 140/3 1411

PARAMETRIC INSTABILITIES
Comments on Various Derivative Methods of the Parametric Dispersion Relations.
EUR-CEA-FC-1014 1448

PARTIAL DIFFERENTIAL EQUATIONS
A Population of Linear, Second Order, Elliptic Partial Differential Equations on Rectangular Domains. Part 1.
AD-A092 248/4 1376

PARTIAL OXIDATION PROCESSES
Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
DOE/ET/15383-22 1364

PARTICLE ACCELERATOR TECHNIQUES
Gasdynamic Particle Accelerators - An Optimization.
AD-A092 069/4 1395

PARTICLE ACCELERATORS
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

PARTICLE BEAM FUSION ACCELERATOR
Particle Beam Fusion Progress Report January 1979 Through June 1979.
SAND-79-1944 1418

PARTICLE MODELS
New Experimental Evidence for a New Interpretation of Flavor SU(3).
DOE/ER/03992-402 1444

PARTICLE SIZE
Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

PARTICLES
Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383

Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383

PARTICULATES
Composition and Characteristics of Particles in the Ocean: Evidence for Present Day Resuspension.
AD-A092 231/0 1349

PASSIVE SOLAR COOLING SYSTEMS
Continuing Development of the DEROB System. Quarterly Report, July 1, 1980-September 30, 1980.
DOE/CS/30254-1 1357

PASSIVE SOLAR HEATING SYSTEMS
Continuing Development of the DEROB System. Quarterly Report, July 1, 1980-September 30, 1980.
DOE/CS/30254-1 1357

SOLCOST Support and Maintenance. Quarterly Technical Status Report.
DOE/ET/20108-T1 1357

PASSIVE SYSTEMS
Signal Processor for IR Sensors.
AD-B030 997/1 1411

PATHOGENS
Study of Pathogenic Free-Living Amebas in Fresh-Water Lakes in Virginia.
PB81-126450 1322

PATROL AIRCRAFT
P-3 Orion Fuel-Saving Modification Wind Tunnel Study.
AD-A091 906/8 1288

PATTERN RECOGNITION
Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354

Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354

Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354

Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354

Automated Reading of Videotape.
AD-A092 224/5 1355

Reprint: Syntactic Models in Pattern Recognition and Applications.
AD-A092 468/8 1356

PATTERSON BRIXIUS GREY CREEK DAM
National Dam Safety Program. Patterson, Brixius, Grey Creek Watershed Project, Site 1 (Inventory Number NY698), Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 296/3 1382

PATTERSON BRIXIUS GREY CREEK SITE 2 DAM
National Dam Safety Program. Patterson Brixius Grey Creek Watershed Project, Site 2 (Inventory Number NY 725). Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 452/2 1382

PDX DEVICES
Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418

PEAT
Peat Resources of North Carolina. Quarterly Progress Report.
DOE/ET/10159-T1 1342

First Technical Contractors' Conference on Peat. Final Report.
DOE/ET/10159-T3 1342

PENETRATION
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433

Soil mechanics
Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
AD-B006 844/5 1350

PENNSYLVANIA
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

PERFORMANCE (ENGINEERING)
Measurement of Performance Parameters for a FLIR Thermal Imaging System.
AD-A092 140/3 1411

PERFORMANCE (HUMAN)
Errors in Human Performance.
AD-A091 925/8 1308

Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308

Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
AD-A092 275/7 1304

Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
AD-A092 370/6 1305

Effect of Response Mode on Target Identification.
AD-A092 381/3 1412

Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305

PERFORMANCE TESTS
Ratemeter Directional Dependence, Radiac.
AD-A092 235/1 1421

PERIODICALS
Business America - The Journal of International Trade, Volume 3, Number 24, December 1, 1980.
PB81-124398 1300

Dimensions/NBS. Volume 64, Number 8, October 1980.
PB81-133654 1397

PEROXIDES
Chemiluminescence of Secondary Peroxyesters.
AD-A092 322/7 1334

Chemically Initiated Electron-Exchange Luminescence.
AD-A092 355/7 1334

Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

PERSONNEL MANAGEMENT
Personnel Management in the All-Volunteer Force Study.
AD-A092 108/0 1304

PERSONNEL RETENTION
A General Retention Model Applied to the Naval Aviator.
AD-A092 308/6 1305

PERSONNEL SELECTION
Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305

PERT METHOD
General Application of the Critical Path Method to Resource Characterization and Planning for Underground Coal Mining. Final Technical Report.
DOE/ET/11268-3 1345

PERTURBATION THEORY
Reprint: Nonlinearly Perturbed Volterra Equations.
AD-A092 495/1 1377

PERTURBATIONS
Analytic Methods for the Approximate Solution of Singularly Perturbed Systems.
AD-A091 907/6 1375

PESTICIDES
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326

Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329

Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329

PETROCHEMICALS
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

PETROLEUM
Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330

PETROLEUM PRODUCTS
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330

PETROLEUM REFINERIES
Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330

Industrial Application Fluidized Bed Combustion: Indirect Fired Process Heaters. Final Program Report.
DOE/ET/10379-T3 1453

PHARMACOLOGICAL ANTAGONISTS
Reprint: Naloxone Alteration of Physiological Parameters in Spinally Transected Animals.
AD-A092 340/9 1325

Reprint: Opiate-Like Effects of Electroconvulsive Shock in Rats: A Differential Effect of Naloxone on Nociceptive Measures.
AD-A092 341/7 1325

PHASE DIAGRAMS
Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372

PHASE SHIFT CIRCUITS
Ferrites
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.

AD-912 789/5 1360

Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
AD-912 790/3 1360

Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
AD-912 791/1 1360

Ferrite/Dielectric High Power Phase Shifter Development. Part IV. Arc-Plasma Spray Fabrication and Material Studies.
AD-912 792/9 1360

PHASE TRANSFORMATIONS
The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
AD-A092 247/6 1369

PHENOL
Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

PHENOL/PENTACHLORO
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322

PHENOLS
Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369

PHENYLEPHRINE
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325

PHI4-FIELD THEORY
Suggestion About the Absence of the Phase Transition, Vacuum Degeneration, Spontaneous Symmetry Breaking and Zero-Mass Goldstone-Bosons in QFT Models of the Type Gphi exp 4.
JINR-E-2-12637 1445

PHORBOL ESTERS
Study of the Mechanism of Carcinogenesis by Carcinogens Which Are Negative in the Ames Test. Progress Report.
DOE/EV/10100-02 1328

PHOSPHINE
Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 162/7 1333

PHOSPHINE OXIDE/TRIS (AMINOETHYL)
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332

PHOSPHINE/TRIS (AMINOETHYL)
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332

PHOSPHORUS
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

PHOTOACTIVATION ANALYSES
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

PHOTOCATHODES
Reprint: Evaluation of High Efficiency CsI and CuI Photocathodes for Soft X-Ray Diagnostic.
PB81-121006 1353

Infrared detectors
1.06 Micrometer High Sensitivity IR Photocathode.
AD-918 930/9 1411

PHOTOCHEMICAL REACTIONS
On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339

Photocatalytic Reaction of Water with Carbon over Platinized Titania.
AD-A092 222/9 1333

Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294

Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315

PHOTOCHEMISTRY
Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335

PHOTOCONDUCTIVITY
Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450

PHOTODECOMPOSITION
The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339

PHOTODEGRADATION
Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

PHOTODIODES
P + N Gallium Phosphide Photodiodes.
PAT-APPL-6-185 471 1352

PHOTOELECTRON SPECTROSCOPY
Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
LYCEN-7868 1373

PHOTOELECTRONS
Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456

PHOTOGRAPHIC CHEMICALS
The Toxicity of Photographic Chemicals.
AD-A091 914/2 1328

PHOTOGRAPHIC IMAGES
Automated Reading of Videotape.
AD-A092 224/5 1355

Data transmission systems
Redundant Area Coding Study.
AD-888 625/1 1358

Photointerpretation
Coherent Rear Projection Viewer Evaluation.
AD-884 645/3 1399

PHOTOGRAPHIC PRINTERS
Orthophotography
Off-Line Orthographic Printer.
AD-919 575/1 1399

PHOTOGRAPHIC PROCESSING
The Toxicity of Photographic Chemicals.
AD-A091 914/2 1328

PHOTOGRAPHIC PROJECTORS
Acceptability
Coherent Rear Projection Viewer Evaluation.
AD-884 645/3 1399

PHOTOGRAPHIC RECTIFIERS
Computer programming
Off-Line Orthographic Printer.
AD-919 575/1 1399

PHOTONS
Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363

One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
AD-A092 189/0 1333

Simple Parametrization of the Structure Functions of the Photon.
LPC-79-16 1446

PHOTONUCLEAR REACTIONS
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442

PHOTOSYNTHESIS
Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315

Energetic Control of Intact Chloroplast Photosynthesis.
BNL-28423 1315

Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329

PHOTOVOLTAIC POWER SUPPLIES
Photovoltaic Power System at Natural Bridges National Monument.
DOE/ET/20279-105 1365

PHYSICAL CHEMISTRY
Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335

PHYSICAL FITNESS
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets.
AD-A092 359/9 1324

PHYSICAL PROTECTION DEVICES
Performance Estimates for Personnel Access Control Systems.
SAND-80-0445 1421

PHYSICAL RADIATION EFFECTS
Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335

PHYSIOLOGICAL EFFECTS
Physiological and Pharmacological Effects Following Oral Administration of Monopropellants, August 1978-September 1979.
AD-B042 976/1 1328

PHYTOPLANKTON
Phytoplankton and Physical-Chemical Conditions in Selected Rivers and the Coastal Zone of Lake Michigan, 1972.
COO-2003-36 1322

Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329

PICA
Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Testing Paint to Prevent Paint Pica. One Year Oral Toxicity Study in Monkeys. Report Number 3E.
PB81-139362 1330

PIEZOELECTRIC TRANSDUCERS
Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353

PILE FOUNDATIONS
Foundation Piles for Marine Platforms. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850232 1393

Foundation Piles for Land Construction. December, 1976-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850240 1395

PILE NEUTRONS
ENDF/B Based 27-Group Cross-Sections for Some Rare-Earth and Concrete Elements.
INDC(IND)-25/GV 1422

PILOTS
USAF Test Pilot School. Flight Test Handbook. Performance. Theory and Flight Techniques. Chapters 1 through 9.
AD-A091 990/2 1303

An Evaluation of the Application of ISD to P-3 Pilot Training.
AD-A092 126/2 1304

A General Retention Model Applied to the Naval Aviator.
AD-A092 308/6 1305

Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287

PINE TREES
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292

PION MINUS-PROTON INTERACTIONS
Search for Narrow Anti Pp States in the Reaction pi exp - p Implies p pi exp - Anti Pp at 16 GeV/C.
BNL-28353 1442

PION REACTIONS
Delta -Nucleus interactions. CTP No. 887.
CONF-800863-3 1443

PIONS
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442

Pion Production in Nucleus-Nucleus Collisions Below a Few GeV/Nucleon: Past, Present and Future.
LBL-10899 1445

PIPE FLOW
Laminar Flow of Fluids in Pipes. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855447 1439

PIPELINES
Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
PB81-122533 1393

PIPES
Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428

Development and Testing of Restraints for Nuclear Piping Systems.
UCB/EERC-80/21 1422

PISTOLS
US Military Hand Guns. Examination of Literature for the Last Twenty Years.
AD-B029 722/6 1436

PITTSBURGH PNEUMONIA
Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318

The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
AD-A092 287/2 1318

PIVOTS
Wings
Advanced Metallic Air Vehicle Structure Program.

AD-B007 465/8 1289

PIXELS
Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354

Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354

PLANAR WINGS
Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289

PLANE GEOMETRY
Simple Algorithms for Calculation of Scale Factors for Plan Coordinate Systems (1927 NAD and 1983 NAD).
AD-A092 461/3 1377

PLANETARY ATMOSPHERES
Extraterrestrial Atmospheres. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851198 1292

PLANING SURFACES
Program PHFMOPT, Planing Hull Feasibility Model, User's Manual.
AD-B033 624/8 1393

PLANKTON
Reprint: Planktonic Microfossils and the Recognition of Ancestors.
AD-A092 508/1 1342

PLANNING
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

Manufacturing Methods and Technology Program Plan, CY 1980.
AD-A092 243/5 1390

PLANT GROWTH
Reprint: Response to Fertilization by Various Plant Growth Forms in an Alaskan Tundra: Nutrient Accumulation and Growth.
AD-A092 116/3 1316

PLANT LOCATION
Bereikbaarheid als Vestigingsplaatsfaktor voor Bedrijven (Attainability as a Location Factor for Industry).
PB81-125635 1300

PLASMA
Abstracts of Papers Presented at the Twenty-Second Annual Meeting of the Division of Plasma Physics of the American Physical Society.
DOE/ET/53051-8 1416

Anomalous Transport Due to Shear-Alfven Waves.
PPPL-1709 1418

Numerical Solution of Initial-Value Problems in Plasma Physics.
UCRL-85033 1448

PLASMA CONTROL
Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
PB81-850943 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850950 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850968 1448

PLASMA DIAGNOSTICS
Heavy Ion Beam Probing.
DOE/ET/53004-2 1447

Interferometric Measurement of Small Refraction Angles.
NRL-MR-4353 1448

Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418

PLASMA INSTABILITY
Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
PB81-850943 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850950 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850968 1448

PLASMA MACROINSTABILITIES
High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

Second Region of Stability.
PPPL-1715 1448

PLASMA SIMULATION
Stability Analysis of Cylindrical Vlasov Equilibria.
DOE/ET/53051-113 1447

Numerical Solution of Initial-Value Problems in Plasma Physics.
UCRL-85033 1448

PLASMAS (PHYSICS)
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447

Reprint: A Test of Two Theories for the Low-Frequency Cutoffs of Nonthermal Continuum Radiation.
AD-A092 086/8 1293

A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

Momentum Distribution of Ions in Plasma Beam.
AD-A092 385/4 1447

PLASMOIDS
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447

PLASTIC COATINGS
Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
PB81-139370 1374

Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F).
PB81-139388 1374

PLASTIC PROPERTIES
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449

PLASTICS
Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings--Translation.
AD-A092 095/9 1351

PLASTICS EXTRUDING
Plastics Extrusion. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855124 1390

PLATES
Effective Shear Modulus for Flexural and Extensional Waves in an Unloaded Thick Plate.
AD-A092 149/4 1449

PLATOON LEVEL ORGANIZATIONS
Independent Evaluation Report for Platoon Early Warning System (PEWS-IER) AN/TRS-2( ).
AD-B023 039/1 1400

PLOTTING
WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356

PLT DEVICES
Ion Cyclotron Heating of Plasmas with Two-Ion Components.
PPPL-1713 1418

PLUGS
Optical equipment components
Optical Couplers.
AD-B009 469/6 1440

PLUMES
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335

PLUTONIUM
Quantitative Analysis of Carbon in Plutonium.
CEA-R-5013 1335

Continuous Plutonium Monitor for Nuclear Facility off-Gas Streams.
ENICO-1054 1396

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

PLUTONIUM 238
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
KFK-2860 1429

As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

PLUTONIUM 239
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

PLUTONIUM 240
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

PLUTONIUM FLUORIDES
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

PLUTONIUM ISOTOPES
Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420

PLUTONYL COMPOUNDS
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

PNC
Semi-Annual Progress Report of Power Reactor and Nuclear Fuel Development Corporation, Tokai Works. July-December 1977.
PNCT-831-78-02 1430

PNEUMOCONIOSIS
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

POLARIZED BEAMS
Parity Violation in Polarized Electron Scattering.
SLAC-PUB-2619 1447

POLAROGRAPHIC ANALYSIS
Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373

POLICIES
Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851909 1297

POLIOVIRUSES
Disinfection of Viruses in Water by Ozone.
AD-A092 252/6 1318

POLISHES
Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370

POLITICAL IDEOLOGY
The Legacy of Ideology in Soviet Foreign Policy Toward the West.
AD-A092 283/1 1302

POLLUTION
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322

Abstracts of Ongoing NSF Research Related to the Eruption of Mt. St. Helens.
PB81-132045 1343

POLLUTION CONTROL
Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

POLYAMIDE RESINS
Nylon Products. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855405 1374

POLYCRYSTALLINE
Interdiffusion of Metals and Semiconductors.
AD-A091 961/3 1450

POLYCRYSTALS
Computer Program for the Determination of X-Ray Reflections from a Randomly Oriented Polycrystalline Sample by Diffractometer.
NRCN(TN)-023 1437

POLYCYCLIC AROMATIC HYDROCARBONS
Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
CONF-8010108-3 1315

POLYELECTROLYTES
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
PB81-132987 1324

POLYETHERS
Perfluorocarbon Ethers.
PAT-APPL-6-182 564 1374

POLYETHYLENE
Polyethylene Adhesives. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855322 1367

POLYETHYLENES
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

Crosslinked Crystalline Polymer and Methods for Cooling and Heating.
PATENT-4 182 396 1338

POLYMERIZATION
Perfluorocompcunds.
PAT-APPL-6-182 562 1374

POLYMERS
The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
AD-A092 105/6 1373

A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373

Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368

Molecular Fraction Behavior in Oriented Polymers.
AD-A092 241/9 1373

Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369

Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332

Reprint: Migration Models for Polymer Additives,
PB81-126146 1323

Reprint: Statistical Thermodynamics of Bulk and Surface Properties of Polymer Mixtures,
PB81-126153 1338

Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts,
PB81-126161 1338

Reprint: The Lowest Laser-Raman Active Accordion (ALR) Type Oscillations in Crystalline Polymers,
PB81-126187 1339

Reprint: Configurational Properties of Star-Branched Polymers,
PB81-126195 1339

Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1367

Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292

Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855272 1374

POLYSULFONES
The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
AD-A091 887/0 1373

POLYVINYLIDENES
A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373

POPULUS TREMULOIDES
Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291

POROSITY
Analysis of Combustion and Heat Transfer in a Porous Graphite Medium.
AD-A092 094/2 1368

POROUS MATERIALS
Contribution to Research on the Elastic and Elastoplastic Behavior of Porous Materials.
CEA-R-5006 1373

POTABLE WATER
Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329

POTASSIUM
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 288/0 1327

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Study of Seed Reporcessing Systems for Open Cycle Coal Fired MHD Power Plants.
DOE/ET/15613-T1 1364

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

POTASSIUM BROMIDES
Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

POTASSIUM CHLORIDES
Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

POTASSIUM COMPOUNDS
Color Centers in KCN: a Structural Analysis of Crystalline Domains.
INIS-mf-5644 1437

POTASSIUM IODIDES
Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327

POTENTIAL FLOW
PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438

A Green-Function Method for Wave Interaction with a Submerged Body,
PB81-122269 1438

POWER REACTORS
Development and Testing of Restraints for Nuclear Piping Systems.
UCB/EERC-80/21 1422

POWER SPECTRA
A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358

POWER SUPPLIES
Theory of the Arc Discharge in Air Blast Breakers.
LA-8488-T 1417

POWER SUPPLY CIRCUITS
Interactive Mine-Power-System Analysis--APL Fault Program.
PB81-130858 1348

POWER TRANSMISSION
MOD-2 Wind Turbine Farm Stability Study.
DOE/NASA/0134-1 1365

PREDICTIONS
Futures Group Periodic Report-3,
AD-A092 202/1 1302

Lifetime Prediction of Organic Coating/Metal System.
AD-A092 382/1 1368

Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392

Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342

PRESSURE COMPENSATING FLUIDS
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352

PRESSURE HULLS
An Economic and Technical Study on the Feasibility of Using Advanced Joining Techniques in Constructing Critical Naval Marine Structures.
AD-A092 299/7 1390

PRESSURE TRANSDUCERS
Reprint: High-Precision Instrumentation System for Sea-Bed Pressure Measurements in Muddy Sediments.
AD-A091 974/6 1348

PRESSURE VESSELS
BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking: Resolution of Generic Technical Activity A-10.
NUREG-0619-REV-1 1428

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

PRESSURIZED WATER REACTORS
An Interactive Code for a Pressurized Water Reactor Incorporating Temperature and Xenon Feedback.
AD-A092 304/5 1427

PREVENTIVE DENTISTRY
Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
PB81-122962 1320

PRIMARY BATTERIES
Electronic countermeasures
Advanced Aluminum-Chlorine Battery for Expendable ECM Devices.
AD-B004 957/7 1366

PRIMARY COOLANT CIRCUITS
Development and Testing of Restraints for Nuclear Piping Systems.
UCB/EERC-80/21 1422

PRINTED CIRCUIT BOARDS
Thermal Analysis and Design of Air Cooled Electronic Circuit Boards Using a Desktop Computer.
AD-A092 309/4 1359

PRINTING
Non-Fouling Print Stylus.
PATENT-4 206 466 1399

PRIORITIZATION
Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.
AD-A091 956/3 1308

PROBABILITY
Optimal Control of Systems with Uncertainty.
AD-A092 389/6 1377

PROBES
Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454

PROBLEM SOLVING
Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

Systems engineering
The Delphi Technique and ITS Applicability to Army Systems Analyses.
AD-904 407/4 1378

PROCESS CONTROL
Computer Controlled Forging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855165 1391

PROCESS HEAT REACTORS
Gas Reactor International Cooperative Program. HTR-Synfuel Application Assessment.
COO-4057-12 1427

High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428

PROCESSING
HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450

PRODUCTION CONTROL
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435

PRODUCTION ENGINEERING
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390

PRODUCTION MODELS
The Study of Production Leadtime Forecasting Models.
AD-A091 970/4 1390

PRODUCTIVITY
Maintenance Productivity.
AD-A092 250/0 1296

Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
AD-A092 370/6 1305

Quality of Worklife Programs: A Preliminary Technology Assessment,
PB81-125379 1309

PROFILOMETERS
Profilometers. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851719 1398

PROFITS
Profit Performance. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851727 1301

PROGRAMMED TUTORING
Tutorial Instruction on a Computer. The Illinois Series on Educational Application of Computers, No. 6e.
ED-183 186 1305

PROGRAMMING LANGUAGES
Compilers
The Improved JCVS.
AD-923 431/1 1356

PROGRAMMING MANUALS
Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452

PROJECT MANAGEMENT
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study,
PB81-138968 1310

Integrated Analysis of the Experimental Housing Allowance Program: Sixth Year Report.
PB81-139024 1310

PROJECTILE FUZES
XM714 Delay Fuze Tests.
AD-B024 828/6 1433

PROJECTILE TRAJECTORIES
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
AD-A092 375/5 1432

PROJECTILES
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
AD-A092 375/5 1432

Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340

Yaw Card Range Tests of a 30mm Target Projectile.
AD-B014 108/5 1432

PROJECTION PRINTERS
Test methods
Engineering Evaluation of the AR-109(XW-1) Viewer-Printer, Projection, Photographic.
AD-884 320/3 1399

PROMOTION (ADVANCEMENT)
An Attempt to Model the USN Unrestricted Line Officer Promotion Process Using an Adapted Length of Service Markov Model.

AD-A092 403/5 1305

Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305

PROMPT NEUTRONS
Evaluation of exp 235 U Neutron Cross Section and gamma Ray Production Data for ENDF/B-V.
BNL-NCS-51184 1442

Prompt Fission Neutron Spectra and Anti nu p.
LA-UR-80-2707 1423

PROPANE
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

PROPANE SULFONIC ACID/ ((CHOLAMIDOPROPYL)-DIMETHYLAMMONIO)
Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
PAT-APPL-6-181 465 1332

PROPARGYL GROUPS
Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369

PROPULSION SYSTEMS
Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392

PROSTAGLANDIN
Chemical and Biochemical Studies of PGBX.
AD-A092 460/5 1315

PROTACTINIUM FLUORIDES
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

PROTECTION
Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
AD-885 837/5 1399

PROTECTIVE CLOTHING
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326

Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437

PROTECTIVE COATINGS
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352

PROTECTIVE MASK FACEPIECES
Development of a Two-Piece Mask and Lens and Mold for Same.
AD-A092 380/5 1326

PROTECTIVE MASKS
Development of a Two-Piece Mask and Lens and Mold for Same.
AD-A092 380/5 1326

PROTEINS
Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
CONF-8010108-3 1315

Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
PAT-APPL-6-181 465 1332

PROTON REACTIONS
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

PROTONS
Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363

PROTOZOAL DISEASES
Study of Pathogenic Free-Living Amebas in Fresh-Water Lakes in Virginia.
PB81-126450 1322

PSI-3105 RESONANCES
Hadronic Decays of the eta/sub C/.
SLAC-PUB-2594 1446

PSI RESONANCES
Open and Hidden Charm Muoproduction.
LBL-11561 1446

PSYCHOPHYSICS
Predictive Models of Human Visual Processes in Aerosystems.
AD-A092 290/6 1308

PTERIDINE/DIAMINO-HYDROXY-METHYL
Improved Synthesis of 2,4-Diamino-6-Hydroxymethylpteridine.
PAT-APPL-6-133 788 1332

PUBLIC HEALTH
Schools of Public Health Trends in Graduate Education,
HRP-0902582/6 1306

PUBLIC LAW
Resource Conservation and Recovery Act (RCRA), January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851024 1363

PUBLIC LIBRARIES
Planning Library Programs,
ED-183 163 1298

PUERTO RICO
Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330

PULMONARY FIBROSIS
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

PULPWOOD
SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374

PULSE CODE MODULATION
Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
AD-A092 111/4 1359

PULSE GENERATORS
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
AD-A091 933/2 1359

Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361

PULSE WIDTH DISCRIMINATORS
Thin Film Hybrid Pulse Width Discriminator Circuit Fabrication.
AD-900 343/5 1360

PUMPED STORAGE
Synthesis of Research and Development in Mechanical Energy Storage Technologies. Progress Report, September 1, 1979-May 31, 1980.
DOE/ET/26106-T1 1366

PUMPING
Investigation of Factors Affecting Energy for Irrigation Pumping.
PB81-127557 1291

PUMPING STATIONS
Investigation of Factors Affecting Energy for Irrigation Pumping.
PB81-127557 1291

PUMPS
State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Pump. 77-KIPS-99.
DOE/ET/33001-T13 1430

PUNCHING MACHINES
Clutch Protection Circuit.
PATENT-4 227 232 1361

PURIFICATION
Polynuclear Aromatic Compounds. Synthesis and Purification.
PB81-125015 1332

PWR TYPE REACTORS
PWR Steamline Break Analysis Assuming Concurrent Steam Generator Tube Rupture.
BNL-NUREG-26903 1427

Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

Developments in Sensitivity Theory.
CONF-800942-10 1430

Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
CONF-800971-2 1427

Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
CONF-801102-1 1427

Experimental Determination of Lower Plenum ECC Injection Effectiveness.
CONF-801102-12 1427

Tables of Homogeneous Equilibrium Critical Flow Parameters for Water in SI Units.
EGG-2056 1427

Improvements to the COBRA-TF (EPRI) Computer Code for Steam Generator Analysis. Final Report.
EPRI-NP-1509 1427

Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

PYR EXPLOSIVE
A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432

PYROGENS
Reprint: Endogenous Pyrogen Physiology.
AD-A091 896/1 1317

Q DEVICES
Experimental Program Based on a High Beta Q Machine. Final Report, 1 May 1978-30 September 1980.
DOE/ET/53081-1 1448

Q SWITCHING
Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361

QUADRATIC EQUATIONS
Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
AD-A092 119/7 1333

QUALITY ASSURANCE
Criteria and Standards for Radiation Therapy (Megavoltage) in Southeastern Michigan.
HRP-0902605/5 1320

QUALITY CONTROL
Enforcing Housing Quality Standards: Some Findings From the Experimental Housing Allowance Program,
PB81-139008 1310

QUALITY OF HEALTH CARE
Determinants and Effects of Organizational Strategies of Control Directed at Quality of Care in Organized Ambulatory Care Settings.
PB81-133613 1322

QUALITY OF LIFE
Quality of Worklife Programs: A Preliminary Technology Assessment,
PB81-125379 1309

QUANTA (CALCULATION)
QUANTA - Users Manual.
AD-A092 379/7 1403

QUANTITATIVE ANALYSIS
GC/MS Assays for Abused Drugs in Body Fluids,
PB81-133746 1326

QUANTUM CHROMODYNAMICS
Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446

Synthesis of Quantum Chromodynamics and Nuclear Physics.
SLAC-PUB-2595 1446

Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446

Quantum Chromodynamics.
SLAC-224 1447

QUANTUM ELECTRODYNAMICS
Description of Final States and Infrared Divergences in Quantum Electrodynamics.
IFVE-OTF-79-96 1444

QUANTUM FIELD THEORY
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443

Conformal Invariance in the Quantum Field Theory.
INIS-mf-5640 1444

Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
INIS-mf-5649 1444

Nonlinear Models in 2 + Epsilon Dimensions.
LBL-11517 1446

Gauge Field Copies.
PUC-tn-01/79 1446

Scattering Theory and 1/N Expansion in the Chiral Gross-Neveu Model.
PUC-tn-08/79 1446

QUANTUM GRAVITY
Soft-Group-Manifold Structure of Supergravity, and the Proof of Unitarity.
DOE/ER/03992-417 1448

QUARK MODEL
Difficult States in the Quark Model: Glueballs and the Pion. CTP No. 874.
CONF-800724-45 1443

QUARKS
Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446

QUARTZ
Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

QUATERNARY PHOSPHONIUM SALTS
Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332

QUESTIONING TECHNIQUES
The Question Episode--Building Block of Teaching with a Computer. The Illinois Series on Educational Application of Computers, No. 4e,

ED-183 184 1305

QUESTIONNAIRES
Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
AD-A092 275/7 1304

QUEUEING THEORY
Final Technical Report, 15 September 1975-14 July 1980,
AD-A091 989/4 1378

Computer Science and Technology: An Analytic Study of a Shared Device Among Independent Computing Systems.
PB81-125783 1357

RABIES VIRUS
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318

RADAR
Millimeter Wave Radar Applications to Weapons Systems.
AD-B012 103/8 1413

RADAR EQUIPMENT
Warning systems
Perimeter Protection System.
AD-503 039/0 1413

RADAR NETWORKS
Modifications to Devenco Model PPS-3A Radar Fence.
AD-885 234/5 1413

RADAR RECEIVERS
Radar Sensitivity Time Control Using Range Gated Feedback.
PATENT-4 228 435 1413

RADAR REFLECTIONS
Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
AD-A091 980/3 1293

Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412

RADAR SCANNING
Error Analysis of Ruby Radar Cross Section Measurement System.
AD-A950 100/8 1413

RADAR TARGETS
Target Recognition System Design: Computational Structures with Response Time Characteristics Dictated by the Operational Environment.
AD-B041 709/7 1413

RADIATION ATTENUATION
Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

RADIATION CHEMISTRY
Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335

RADIATION DAMAGE
Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363

RADIATION DETECTORS
Technique for Adaptive Data Analysis.
COO-3539-13 1422

RADIATION EFFECTS
Radiation Evaluation of the AM2901A Microprocessor.
AD-A092 415/9 1356

Reprint: Retinal Thermal Injury.
AD-A092 466/2 1326

Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327

RADIATION HARDENING
Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
AD-A091 952/2 1359

RADIATION MEASURING INSTRUMENTS
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326

Ratemeter Directional Dependence, Radiac.
AD-A092 235/1 1421

Radiac Ratemeter Calibration Accuracy.
AD-A092 271/6 1421

RADIATION PROTECTION
Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
AECL-6206 1327

Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327

RADIATORS
Kilowatt Isotope Power System: Test Report for the Radiator Long and Short Panels. 77-KIPS-112.
DOE/ET/33001-T14 1431

Kilowatt Isotope Power System: Test Procedure for the Radiator. 78-KIPS-4.
DOE/ET/33001-T31 1431

Kilowatt Isotope Power System: Test Procedure for the Radiator Long and Short Panels. 77-KIPS-111.
DOE/ET/33001-T32 1431

RADICALS
Pulse Radiolysis of Fast Reactions in Molecular Systems. Progress Report, November 1979-September 1980.
DOE/ER/01763-T1 1336

RADIO DIRECTION FINDERS
Radio Direction Finding on High Frequency Short Duration Signals.
AD-A092 136/1 1410

RADIO INTERFERENCE
Reprint: The Volume Emissivity of Type III Radio Bursts.
AD-A091 895/3 1292

RADIO JAMMING
Multi-Tone Jammer.
PAT-APPL-6-181 940 1410

RADIO NAVIGATION
Distance Measuring Equipment Traffic-Loading Capacity Investigation.
AD-A091 977/9 1412

RADIO TELEMETRY
Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
AD-A092 111/4 1359

RADIOACTIVE AEROSOLS
Computer Code to Assess Accidental Pollutant Releases.
DP-1552 1426

Calculation of Particulate Dispersion in a Design-Basis Tornadic Storm from the Atomics International Nuclear Material Development Facility, Santa Susana, California.
DP-1566 1426

RADIOACTIVE WASTE DISPOSAL
Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
ORNL/EIS-156/V1 1424

Submergible Barge Retrievable Storage and Permanent Disposal System for Radioactive Waste.
PAT-APPL-6-106 203 1424

Radioactive Liquid Waste Discharged to Ground in the 200 Areas During 1977.
RHO-CD-34-4Q 1425

Radioactive Liquid Wastes Discharged to Ground in the 200 Areas During 1979.
RHO-CD-79-34-4Q 1425

Assessment of Potential Radionuclide Transport in Site-Specific Geologic Formations.
SAND-79-2468 1425

Technical Developments in the WIPP Program.
SAND-80-1599C 1425

Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
UCRL-84153 1425

RADIOACTIVE WASTE FACILITIES
Preliminary Geochemical and Physical Testing of Materials for Plugging of Man-Made Accesses to a Repository in Basalt.
RHO-BWI-C-66 1425

Effects of Dimensionality and Boundary Conditions on Thermal Calculations.
UCID-18681 1425

RADIOACTIVE WASTE MANAGEMENT
Environmental Development Plan. LWR Commercial Waste Management.
DOE/EDP-0063 1423

Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424

RADIOACTIVE WASTE PROCESSING
Keynote Address at the International Conference on Nuclear Waste Transmutation.
BNL-28193 1423

Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
CONF-801038-4 1423

Effects of Processing Variables on the Product Quality of Large-Scale Glass Forms Containing Simulated SRP Waste.
DP-MS-80-50 1423

Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

Calcination of Sodium-Bearing Waste Using Non-Radioactive Additives.
ENICO-1043 1424

Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8156 1424

Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
ORNL/EIS-156/V1 1424

RADIOACTIVE WASTE STORAGE
Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423

Inventory of Calcined Waste Stored at the ICPP as of September 1979.
ENICO-1044 1424

Storage and Retrievability of Existing and Future ICPP Calcines.
ENICO-1060 1424

FEMWATER: A Finite-Element Model of Water Flow Through Saturated-Unsaturated Porous Media.
ORNL-5567 1343

RADIOACTIVE WASTES
Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423

RADIOBIOLOGY
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326

Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
AECL-6206 1327

RADIOCHEMISTRY
Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

RADIOISOTOPE HEAT SOURCES
Kilowatt Isotope Power System: Component Test Report for the Electric Heat Source Assembly. 77-KIPS-108.
DOE/ET/33001-T10 1430

Air Oxidation and Seawater Corrosion of Hastelloy S and Hastelloy C-4.
PNL-3344 1372

RADIOISOTOPES
Transport and Transfer Rates in the Waters of the Continental Shelf. Annual Report.
COO-2185-13 1383

External Dosimetry.
DOE/TIC-11273 1327

RADIONUCLIDE MIGRATION
FEMWATER: A Finite-Element Model of Water Flow Through Saturated-Unsaturated Porous Media.
ORNL-5567 1343

RADIOTELEPHONES
Mobile Telephone and Paging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855355 1410

RADIOTHERAPY
Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326

Criteria and Standards for Radiation Therapy (Megavoltage) in Southeastern Michigan.
HRP-0902605/5 1320

RAIL GUNS
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

RAIL TRANSPORTATION
Flow Restrictions in Railway Tunnels,
PB81-130395 1389

RAILROAD TRANSPORTATION
The Impact of Demand-Sensitive Railroad Rates Upon the Storage and Transportation System for U.S. Feed Grains.
PB81-134165 1291

RAILROAD TUNNELS
Flow Restrictions in Railway Tunnels,
PB81-130395 1389

RAINDROPS
Reprint: Frequency Dependence of Slant Path Rain Attenuations at 15 and 35 GHZ.
AD-A092 505/7 1413

RAINFALL
Erosion Control Product Testing Using Rainfall Simulation.
PB81-132995 1386

RAMAN SPECTRA
Reprint: Raman Spectra of SiF4 and GeF4 Crystals.
AD-A092 332/6 1334

RAMAN SPECTROSCOPY
Reprint: Raman Spectra of SiF4 and GeF4 Crystals.
AD-A092 332/6 1334

Reprint: On the Jahn-Teller Effect in ReF6.
AD-A092 334/2 1334

Reprint: Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State.
AD-A092 335/9 1334

Reprint: Some Experimental Problems in the Raman Analysis of Microsamples,
PB81-126138 1338

Reprint: The Lowest Laser-Raman Active Accordion (ALR) Type Oscillations in Crystalline Polymers,
PB81-126187 1339

RAMJET ENGINES
Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
AD-B014 875/9 1455

RANDOM VIBRATION
A Response Spectrum Method for Random Vibrations,
PB81-122301 1394

RANDOM WALK
Reprint: Internal Configurations of Span-Constrained Random Walks,
PB81-126179 1377

RANGE (DISTANCE)
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290

RANK ORDER STATISTICS
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

RANKINE CYCLE POWER SYSTEMS
Kilowatt Isotope Power System: Component Test Procedure for the Ground Demonstration System Radiator Bypass Valve.
DOE/ET/33001-T1 1430

Kilowatt Isotope Power System: Component Report for the Ground Demonstration System Accumulator.
DOE/ET/33001-T2 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Alternator Stator.
DOE/ET/33001-T3 1431

Kilowatt Isotope Power System: Test Procedure for the EHSA Multifoil Insulation. 77-KIPS-109.
DOE/ET/33001-T4 1431

Kilowatt Isotope Power System. Phase II Plan. Volume III. Addendum Evaluation Criteria.
DOE/ET/33001-T9 1431

Kilowatt Isotope Power System: Component Test Report for the Electric Heat Source Assembly. 77-KIPS-108.
DOE/ET/33001-T10 1430

Kilowatt Isotope Power System: Test Procedure for the Ground Demonstration System. 77-KIPS-63.
DOE/ET/33001-T11 1430

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Pump. 77-KIPS-99.
DOE/ET/33001-T13 1430

Kilowatt Isotope Power System: Test Report for the Radiator Long and Short Panels. 77-KIPS-112.
DOE/ET/33001-T14 1431

Dynamic Isotope Power System: Technology Verification Phase. Component Test Specification for the Ground Demonstration System Alternator Stator. 79-DIPS-41.
DOE/ET/33001-T26 1431

Component Test Procedure for the Ground Demonstration System Jet Condenser Focusing.
DOE/ET/33001-T29 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Accumulator. 77-KIPS-100.
DOE/ET/33001-T30 1431

Kilowatt Isotope Power System: Test Procedure for the Radiator. 78-KIPS-4.
DOE/ET/33001-T31 1431

Kilowatt Isotope Power System: Test Procedure for the Radiator Long and Short Panels. 77-KIPS-111.
DOE/ET/33001-T32 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Jet Condenser Orifice Performance. 77-KIPS-103.
DOE/ET/33001-T33 1431

RAPID TRANSIT RAILWAYS
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389

RARE EARTH NUCLEI
Form Factor and Multistep-Transfer Effects in Light-Ion and Heavy-Ion Induced Transfer Reactions on Rotational and Transitional Nuclei.
BUP-104 1442

RARE GASES
Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335

RATES (COSTS)
The Impact of Demand-Sensitive Railroad Rates Upon the Storage and Transportation System for U.S. Feed Grains.
PB81-134165 1291

RAYLEIGH SCATTERING
Reprint: Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment.
AD-A092 005/8 1440

REACTION INTERMEDIATES
Pulse Radiolysis of Fast Reactions in Molecular Systems. Progress Report, November 1979-September 1980.
DOE/ER/01763-T1 1336

REACTION KINETICS
Carbon Dioxide Activation; Formation of trans-(Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333

Chemiluminescence of Secondary Peroxyesters.
AD-A092 322/7 1334

Facile Cleavage of the Mo= Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

REACTION TIME
Effect of Response Mode on Target Identification.
AD-A092 381/3 1412

REACTIVITY INSERTIONS
Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

REACTOR ACCIDENTS
Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
CONF-800971-2 1427

Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327

REACTOR COOLING SYSTEMS
Experience with Simplified Inelastic Analysis of Piping Designed for Elevated Temperature Service.
HEDL-SA-1933 1428

REACTOR CORES
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427

REACTOR KINETICS
Developments in Sensitivity Theory.
CONF-800942-10 1430

Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
HEDL-SA-2227-FP 1444

Successive Collision Calculation of Resonance Absorption (AWBA Development Program).
WAPD-TM-1468 1430

REACTOR MATERIALS
State Variable Description of 316 SS Post-Irradiation Mechanical Properties.
HEDL-SA-2174 1429

REACTOR SAFETY
Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
CONF-800971-2 1427

SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
ORNL/CSD-53 1428

Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

READING MACHINES
Automated Reading of Videotape.
AD-A092 224/5 1355

Digital recording systems
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

RECEIVERS
Surface Acoustic Signal Defader.
PATENT-4 219 888 1437

RECIPROCATING COMPRESSORS
Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855413 1390

RECIPROCATING ENGINES
Cooling Systems (Automotive).
AD-A092 236/9 1434

RECOILLESS GUNS
Blast
Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436

RECRUITING
Personnel Management in the All-Volunteer Force Study.
AD-A092 108/0 1304

RECURSIVE FILTERS
Reprint: A Note on Variable Recursive Digital Filters.
AD-A092 131/2 1359

REDUCTION
Plan for the Reduction of Excess Hospital Beds in the Bay and Saginaw Subareas.
HRP-0902558/6 1320

REENTRY VEHICLES
Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

REFORESTATION
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291

REFRACTIVE INDEX
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

REFRIGERATION SYSTEMS
Cryogenics
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part I. Thermodynamic Design and Study of Life-Limiting Components.
AD-891 461/6 1457

Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379

Life expectancy
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
AD-902 944/8 1379

Temperature control
Development of a Temperature Controller for a Vuilleumier (VM) Cycle Power Cylinder.
AD-B007 816/2 1378

REGENERATIVE FUEL CELLS
Review of Thermally Regenerative Electrochemical Systems. Volume I. Synopsis and Executive Summary.
SERI/TR-332-416(V.1) 1366

REGIONAL PLANNING
Indiana Five-Year Water Resources Research and Development Plan. Fiscal Years 1982-1986.
PB81-121253 1383

Water Resource Priorities for the Midwest.
PB81-129801 1386

REGULATIONS
Region V's Guidance for Developing a State Malfunction Notification and Correction Program,
PB81-125601 1384

REIMBURSEMENTS
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
PB81-124687 1320

RELAXATION
Reprint: Noble-Gas Broadening of the Sodium D ' ine Measured by Photon Echoes.
AD-A092 506/5 1335

RELIABILITY
Failure Rates for Fiber Optic Assemblies.
AD-A092 315/1 1440

REMOTE DETECTORS
Coastal Remote Sensing Investigations. Volume 1. Marine Environment.
AD-A092 025/6 1348

The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
AD-A092 217/9 1294

Forecast of Remote Underwater Sensing Technology.
AD-A092 390/4 1407

REMOTE SENSING
Summary of the Western Energy Overhead Monitoring Project.
PB81-129009 1385

RESCUES
Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323

RESEARCH
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297

RESEARCH AND DEVELOPMENT
Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.
PB81-125387 1300

RESEARCH MANAGEMENT
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
AD-A092 253/4 1367

RESEARCH PROJECTS
Water Resources in North Carolina.
PB81-127318 1343

RESEARCH REACTORS
Inspection Methods for Physical Protection Task III Review of Other Agencies' Physical Security Activities for Research Reactors.
UCRL-15275 1429

RESEARCH SHIPS
Advanced Ship System Concepts for Hydrographic Surveying.
AD-A092 374/8 1392

RESERVATIONS (INDIAN)
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
PB81-125619 1303

RESERVOIR RELEASES
Green River Basin Flow Forecasting Models.
PB81-124448 1343

RESERVOIRS
Green River Basin Flow Forecasting Models.
PB81-124448 1343

The Influence of River Water Quality on Storage Reservoir Management.
PB81-128688 1344

RESIDENTIAL BUILDINGS
Residential Radon Daughter Monitor Based on alpha Spectroscopy.
LBL-10768 1422

A 'Reference Building' Approach to Building Energy Performance Standards for Single-Family Residences.
PB81-135642 1380

RESIDENTIAL BUILDINS
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study,
PB81-138968 1310

RESIDUAL FUELS
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

RESIDUES
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

RESONATORS
Reprint: Space Applications of Superconductivity: Resonators for High Stability Oscillators and Other Applications.
PB81-119844 1353

RESOURCE CONSERVATION AND RECOVERY ACT
Resource Conservation and Recovery Act (RCRA). January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851024 1363

RESOURCE MANAGEMENT
Human Resource Management in the Navy: The Specialists' Viewpoint.
AD-A092 279/9 1304

RESPIRATORY DISEASES
Reprint: Survival of Legionella pneumophila in Aerosols: Effect of Relative Humidity.
AD-A091 897/9 1317

Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

RESTRAINTS
Development and Testing of Restraints for Nuclear Piping Systems.
UCB/EERC-80/21 1422

RETINA
Reprint: Retinal Thermal Injury.
AD-A092 466/2 1326

RETINOIDS
Water Soluble Forms of Retinoids.
PAT-APPL-6-170 570 1332

RETRIEVAL SYSTEMS
Storage and Retrievability of Existing and Future ICPP Calcines.
ENICO-1060 1424

RETURN ON INVESTMENTS
Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency,
PB81-139032 1301

REVERSIBLE
On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334

REYNOLDS NUMBER
Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

RHENIUM COMPOUNDS
Reprint: On the Jahn-Teller Effect in ReF6.
AD-A092 334/2 1334

Pulse Radiolysis of Fast Reactions in Molecular Systems. Progress Report, November 1979-September 1980.
DOE/ER/01763-T1 1336

RHODIUM 103 TARGET
Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441

RIBAVIRIN
Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
AD-A092 285/6 1325

RIFLE GRENADE LAUNCHERS
Cold weather tests
Check Test of Launcher, Grenade, 40mm, M203, under Arctic Winter Conditions.
AD-B004 403/2 1436

RING LASERS
Stability
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

RISK
Assessing Risks through the Determination of Rare Event Probabilities.
AD-A092 192/4 1376

ROADS
Metoder foer Bestaemning av Halkfrekventa Vaegstraeckor (Methods for Detecting Road Sections with High Frequency of Ice Formation),
PB81-128290 1385

Studier av Halka Pa Vaegar (Studies of Slipperiness on Roads),
PB81-128316 1385

Vaegojaemnheters Inverkan pa Bilfoerares Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
PB81-129710 1328

Drainage
Expedient Surfacing and Drainage of Roads, Streets, and Parking and Storage Areas in Theater of Operations. Report 2. Tests Conducted Between August 1968 and July 1969,
AD-907 934/4 1382

ROBOTS
Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
PB81-132557 1317

ROCKET ENGINES
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456

Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

ROCKET EXHAUST
Production of Nitrous Oxide in a Rocket Motor Exhaust.
AD-A091 893/8 1380

Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

ROCKET PLUMES
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

ROCKETS
Proceedings of the Workshop/Symposium on the Preliminary Evaluation of the Ionospheric Disturbances Associated with the HEAO-C Launch, with Applications to the SPS Environmental Assessment.
CONF-7911108- 1294

ROLLERS
Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
AD-A092 365/6 1391

ROOFS
Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394

Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395

ROOSEVELT HOT SPRINGS
Bipole-Dipole Survey at Roosevelt Hot Springs, Thermal Area, Beaver County, Utah.
DOE/ID/12079-15 1342

ROOT CANAL
Evaluation of a New Thermoplastic Gutta Percha Obturation Technique Using 45Ca.
AD-A092 391/2 1319

ROTARY COMPRESSORS
Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855413 1390

ROTATION
A New Angular Displacement Transducer.
AD-C019 184/1 1396

ROTOR BLADES (ROTARY WINGS)
Reverse Velocity Rotor System for Rotorcraft.
PATENT-4 227 856 1289

Computer programs
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438

Dynamics
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289

State-of-the-art reviews
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
AD-908 244/7 1289

ROUGHNESS
Vaegojaemnheters Inverkan pa Bilfoerares Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
PB81-129710 1328

ROUTING
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407

RUBIDIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

RUBIDIUM FLUORIDES
Relaxation Rates of Electronic and Nuclear Magnons in Antiferromagnetic Materials.
INIS-mf-5643 1451

RUNOFF
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344

RUTHENIUM
Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
CONF-801038-4 1423

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

RUTHENIUM FLUORIDES
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

SABOT PROJECTILES
Ball Obturation of a Spin Stabilized Tubular Projectile.
AD-A092 410/0 1432

SAFEGUARDS
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
KFK-2860 1429

As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

Performance Estimates for Personnel Access Control Systems.
SAND-80-0445 1421

SAFETY
The Toxicity of Photographic Chemicals.
AD-A091 914/2 1328

KEYWORD INDEX

SAILPLANES
Sailplanes. January, 1972-March, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850596 1290

Sailplanes. January, 1970-July, 1980 (Citations from the Engineering Index Data Base).
PB81-850604 1290

Sailplanes. January, 1970-March, 1980 (Citations from the NTIS Data Base).
PB81-850612 1290

SAINT LOUIS (MISSOURI)
Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383

SALARIES
A Demographic Profile of Minimum Wage Workers, Working Paper Number 4,
PB81-123713 1307

SALMON
Reprint: Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
PB81-120701 1340

California's Salmon Resource - Its Biology, Use and Management.
PB81-134041 1340

SALTON SEA GEOTHERMAL FIELD
Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

SAMARIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

SAMARIUM 154 TARGET
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

SAMPLING THEORY
A Non-Parametric Approach to the Change-Point Problem,
PB81-132854 1377

SAN FRANCISCO (CALIFORNIA)
Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349

SANCTIONS (INTERNATIONAL RELATIONS)
Economic Sanctions in the 1990's,
AD-A092 201/3 1302

SAND
Reprint: Sand Motion Initiation by Water Waves: Two Asymptotes.
AD-A092 045/4 1341

Interaction Effects of Simultaneous Torsional and Compressional Cyclic Loading of Sand.
AD-A092 352/4 1350

SATELLITE METEOROLOGY
A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293

SATELLITES
Kilowatt Isotope Power System: Component Test Procedure for the Ground Demonstration System Radiator Bypass Valve.
DOE/ET/33001-T1 1430

Kilowatt Isotope Power System: Component Report for the Ground Demonstration System Accumulator.
DOE/ET/33001-T2 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Alternator Stator.
DOE/ET/33001-T3 1431

SATURATION DIVING
Air Saturation Dive 4 - 8 February 1980, CEDD Test Number 1-80.
AD-A092 368/0 1328

SCALING FACTORS
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368

An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
AD-A092 405/0 1399

Simple Algorithms for Calculation of Scale Factors for Plan Coordinate Systems (1927 NAD and 1983 NAD).
AD-A092 461/3 1377

SCANDIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

SCANNING
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

SCATTERING
Reprint: Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State.
AD-A092 335/9 1334

SCHISTOSOMIASIS
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

SCHUR FUNCTIONS
On Schur Optimality.
AD-A092 185/8 1376

SCIENTIFIC SATELLITES
Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354

SCINTILLATION
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

SCREENS (DISPLAYS)
Projection printers
Engineering Evaluation of the AR-109(XW-1) Viewer-Printer, Projection, Photographic.
AD-884 320/3 1399

SCREWS
Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1936,
AD-A091 915/9 1288

SCRUBBERS
MK 11 and MK 12 CO2 Scrubber Development.
AD-A092 314/4 1323

Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
PB81-122723 1384

SEA ICE
Investigations of Sea Ice Aniscropy, Electromagnetic Properties, Strength, and Under-Ice Current Orientation,
AD-A092 089/2 1349

SEARCH AND RESCUE
Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323

SEARCH RADAR
A Netted Search Radar System.
PAT-APPL-6-185 469 1413

Data transmission systems
Data Link, Helicopter Supported Radar.
AD-885 551/2 1413

SEAWATER
Prospects for the Recovery of Uranium from Seawater. Final Report.
MIT-EL-80-001 1371

SEDIMENT-WATER INTERFACES
Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385

SEDIMENTATION
Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348

Reprint: Oblique Anhysteretic Remanent Magnetization.
AD-A092 081/9 1349

SEDIMENTS
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

A Trophic Classification of Minnesota Lakes Based on Lake Sediments.
PB81-124141 1343

Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385

Reprint: Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
PB81-129470 1339

SEED RECOVERY
Study of Seed Reprocessing Systems for Open Cycle Coal Fired MHD Power Plants.
DOE/ET/15613-T1 1364

SEEDING
Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

SEEPAGE
Mathematical Analyses of Landside Seepage Berms.
AD-A092 014/0 1350

SEEPAGE BERMS
Mathematical Analyses of Landside Seepage Berms.
AD-A092 014/0 1350

SEISMIC DATA
Spectral Ratios for Explosions in Salt.
AD-A091 911/8 1349

SEISMIC DESIGN
Seismic Stability Evaluation of Earth Structures.
PB81-123069 1351

SEISMIC DETECTION
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

SEISMIC EFFECTS
Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429

SEISMIC PROSPECTING
Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851362 1348

SEISMIC RISK
Risk and Public Policy.
PB81-120057 1394

Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980,
PB81-120081 1350

SEISMIC SURVEYS
Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851362 1348

SEISMIC WAVES
Spectral Ratios for Explosions in Salt.
AD-A091 911/8 1349

Relationship between Ms and mb for Small Earthquakes in Uzbekistan, USSR.
AD-A091 984/5 1349

SEISMOLOGY
Regional Seismicity. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850935 1350

SELENIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

SEMICONDUCTOR DEVICES
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351

Burn-In of Uncased Semiconductors. A Feasibility Study.
AD-A092 076/9 1351

Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings--Translation.
AD-A092 095/9 1351

SEMICONDUCTOR DIODES
Semiconductor lasers
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439

SEMICONDUCTOR LASERS
Laser Modes as an Eigenfunction of an Operator Equation.
INIS-mf-5653 1440

Semiconductor diodes
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439

SEMICONDUCTOR MATERIALS
Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337

High Intensity Polarized Electron Sources.
SLAC-PUB-2621 1441

SEMICONDUCTORS
Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449

Deep Level Transient Spectroscopy as an Experimental Technique.

AD-A091 941/5 1449

Interdiffusion of Metals and Semiconductors.
AD-A091 961/3 1450

HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450

SENSITIVITY
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377

SEPARATORS
Apparatus for Removing Corn from Cob.
PAT-APPL-6-187 380 1323

SERIALS
The OCLC Serials Sub-System: A First Evaluation,
ED-183 161 1298

SERVOMECHANISMS
Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357

SERVOVALVES
Two-Stage Servovalve Development Using a First-Stage Fluidic Amplifier.
AD-A092 011/6 1393

SET THEORY
Attractivity Properties of alpha-Contractions.
AD-A091 975/3 1375

Semiantichains and Unichain Coverings in Direct Products of Partial Orders.
AD-A092 256/7 1377

SEWAGE DISPOSAL
Wastewater Alternatives for Small Communities,
PB81-131658 1386

SEWAGE SLUDGE
Design and Operation of the Sandia Pilot Plant.
SAND-80-1954C 1388

SEWAGE TREATMENT
Treatment of Primary Effluent by Rapid Infiltration.
PB81-129124 1386

Modesto Wastewater Facilities Improvements.
PB81-130502 1386

Water Availability for the City of Lamar, Colorado.
PB81-130965 1386

Wastewater Alternatives for Small Communities,
PB81-131658 1386

SEWAGE TREATMENT PLANTS
National Municipal Policy and Strategy for Construction Grants, NPDES Permits, and Enforcement Under the Clean Water Act.
PB81-130783 1386

SEX
Homosexuality and the U.S. Military.
AD-A092 179/1 1308

SHAFT EXCAVATIONS
Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347

SHAPED CHARGES
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433

SHELL MODELS
Application of the Shell Model to Nuclear Spectroscopy.
DOE/TIC-11287 1444

SHELLS (STRUCTURAL FORMS)
Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368

SHELTERS
Design
Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
AD-885 837/5 1399

Ordnance
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 684/2 1433

SHIELDING
Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
CONF-801011-14 1415

Preliminary Radiation Criteria and Nuclear Analysis for ETF.
GA-A-16072 1416

Non-Fouling Print Stylus.
PATENT-4 206 466 1399

SHIELDING MATERIALS
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

ENDF/B Based 27-Group Cross-Sections for Some Rare-Earth and Concrete Elements.
INDC(IND)-25/GV 1422

SHIGELLA DYSENTERIAE
Reprint: Isolation and Characterization of Minicell-Producing Mutants and Shigella spp.
AD-A091 918/3 1317

Reprint: Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study.
AD-A091 922/5 1317

SHIGELLA FLEXNERI
Reprint: Isolation and Characterization of Minicell-Producing Mutants and Shigella spp.
AD-A091 918/3 1317

SHIP HULLS
Documentation for an Improved Version of HULIMP, A Ship Hull Improvement Computer Program Based on the Baba Theory.
AD-A092 133/8 1392

An Investigation of Appendage Drag,
AD-A092 353/2 1392

Documentation for the Ship Hydrostatics Computer Program HYDRO.
AD-A092 454/8 1393

Program Manual NSUP.
AD-A092 474/6 1393

Time-Domain Method for Computing Forces and Moments Acting on Three Dimensional Surface-Piercing Ship Hulls with Forward Speed.
AD-A092 475/3 1393

SHIP PERSONNEL
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303

Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304

SHIPS
Effect of Response Mode on Target Identification.
AD-A092 381/3 1412

Reprint: Ship Centerplane Source Distribution.
AD-A092 431/6 1392

Infrared Thermometry and the Telatemp 44 as a Ship System Maintenance Monitoring Tool.
AD-B018 764/1 1393

SHIVA FACILITY
AR Film on Phase-Separated Glass. Final Report, January 1979-April 1980.
UCRL-15285 1440

SHOCK (MECHANICS)
The Shock and Vibration Digest. Volume 12, Number 11.
AD-A092 384/7 1449

SHORT TAKEOFF AIRCRAFT
Aerodynamic characteristics
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438

Aerodynamic configurations
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289

SHRINKPROOFING
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369

SIGNAL PROCESSING
Research in Monolithic, Signal-Processing Circuits.
AD-A091 902/7 1358

Hardware Realizations for Digital Signal Processing.
AD-A091 904/3 1359

Multi-Sensor Detection Study.
AD-A091 954/8 1358

Optimization of Multichannel Processing.
AD-A091 987/8 1358

Reprint: Memoryless Quantizer-Detectors for Constant Signals in m-Dependent Noise.
AD-A092 123/9 1358

A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358

Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411

Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358

Design and Implementation of Multi-Input Adaptive Signal Extractions.
AD-A092 265/8 1355

Reprint: Image Restoration by Short Space Spectral Subtraction.
AD-A092 298/9 1358

Signal Processing Circuit Development.
AD-A092 371/4 1411

Signal Processor for IR Sensors.
AD-B030 997/1 1411

Surface Acoustic Signal Defader.
PATENT-4 219 888 1437

SILICA
Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

SILICON
Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

0.5 to 6 MeV Ar Ion Induced X-Ray Emission in View to Analytical Application.
CRN-CPR-79-7 1336

Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

Silicon Web Process Development.
DOE/JPL/954654-80/12 1331

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Determination of Fano's Factor in Semiconductors.
INIS-mf-5648 1451

SILICON 28 REACTIONS
Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443

SILICON CARBIDES
Ceramic Materials for Fusion Reactors. Interim Report.
EPRI-AP-1499 1367

SILICON CHLORIDES
Low-Cost Solar Array Project. Task I. Silicon Material. Investigation of the Hydrogenation of SiCl sub 4.
DOE/JPL/955382-79/6 1365

SILICON COMPOUNDS
Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

SILICON CONTROLLED RECTIFIERS
Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
AD-A092 078/5 1351

Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351

SILICON NITRIDES
Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367

SILICON OXIDES
Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367

SILICON SOLAR CELLS
Photovoltaic Mechanisms in Polycrystalline Thin-Film Silicon Solar Cells. Quarterly Report No. 4, May 1-July 31, 1980.
DOE/ET/23108-5 1365

Laser Annealing of Ion Implanted CZ Silicon for Solar Cell Junction Formation. Quarterly Report No. 2.
DOE/JPL/955696-80/2 1365

SILICONES
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292

SILICOSIS
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

SILVER
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

KEYWORD INDEX

SILVER 109 TARGET
Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443

SILVER ZINC BATTERIES
Battery chargers
High Rate, Rechargeable, Silver-Zinc Pile Type Battery.
AD-B007 515/0 1366

SIMPLEX METHOD
A Composite Algorithm for Mixed Integer Constrained Nonlinear Optimization.
AD-A092 435/7 1378

SIMULATORS
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303

Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304

Erosion Control Product Testing Using Rainfall Simulation.
PB81-132995 1386

SITE SELECTION
Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
DOE/ET/20280-3 1365

SKID RESISTANCE
Studier av Halka Pa Vaegar (Studies of Slipperiness on Roads),
PB81-128316 1385

SKIN DISEASES
Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 594 1325

SKIN FRICTION
Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396

SLANT RANGE
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290

SLATE
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300

SLICING
Electric Gel Slicer.
PAT-APPL-6-174 239 1396

SLOT ANTENNAS
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359

SLUDGE DISPOSAL
Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area.
PB81-132151 1386

Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area. Appendices.
PB81-132169 1386

SLUDGE TREATMENT
Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area.
PB81-132151 1386

Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area. Appendices.
PB81-132169 1386

SMALL ARMS
Design of Fluidic Devices for Small Arms Stabilization,
AD-A092 027/2 1435

SMALL BUSINESSES
Financial Needs of Small Minority Firms.
PB81-128852 1300

SNAILS
Reprint: The Snail Resource of the Eastern Bering Sea and Its Fishery,
PB81-120750 1317

SNOW COVER
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412

SOCIAL ANTHROPOLOGY
Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica,
PB81-125775 1291

SOCIAL SERVICES
Evaluation of HEW - Assisted Programs to the Hispanic Population of Clark County, Nevada.
PB81-125726 1309

Services in Support of Housing Search: How Necessary and Effective in the Experimental Housing Allowance Program,
PB81-138992 1310

The Elderly: Social, Health, and Transportation Problems and Services. 1978-August, 1979 (Citations from the NTIS Data Base).
PB81-801573 1315

The Elderly: Social, Health, and Transportation Problems and Services. September, 1979-December, 1980 (Citations from the NTIS Data Base).
PB81-801581 1315

SODIUM
Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
DOUNREAY-TRANS-826 1337

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

SODIUM BROMIDES
Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

SODIUM CHLORIDES
Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

SODIUM IODIDES
Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

SOIL MECHANICS
Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons,
PB81-120032 1350

Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
PB81-120065 1350

Penetration
Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
AD-B006 844/5 1350

SOIL STRUCTURE INTERACTIONS
Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980.
PB81-120081 1350

SOILS
The Neumann Solution Applied to Soil Systems,
AD-A092 244/3 1350

Exchange of Lyotropic Series Cations by Micaceous Vermiculite and Its Weathering Products Determined by Electron Microscopy and Radiochemical Analysis. Final Technical Report, June 1, 1965-October 31, 1978.
DOE/EV/01515-84 1426

SOLAR ABSORBERS
Flat Plate Thermal Solar Collectors: A Physical Background.
PB81-135741 1363

SOLAR CELLS
Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363

Results of the Solar Cell Experiments aboard the NTS-2 Satellite after 811 Days in Orbit.
AD-A092 438/1 1363

SOLAR COLLECTORS
Environmental Influences in the Simulation of a Solar Space Heating System.
AD-A092 436/5 1378

Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

SOLAR COOLING SYSTEMS
Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

SOLAR ENERGY
Overcoming Land Use Barriers to Solar Access: Solar Planning Recommendations for Local Communities.
PB81-127359 1385

Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1380

SOLAR FLARES
Reprint: The Volume Emissivity of Type III Radio Bursts.
AD-A091 895/3 1292

SOLAR FURNACES
Reprint: Analysis of Gas Dissociation Solar Thermal Power System.
AD-A091 982/9 1363

SOLAR HEATING
Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
AD-A092 084/3 1293

Environmental Influences in the Simulation of a Solar Space Heating System.
AD-A092 436/5 1378

SOLAR HEATING SYSTEMS
Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

Solar Heating System at Security State Bank, Starkville, Mississippi. Final Report.
DOE/NASA/CR-161550 1379

Solar Energy System Performance Evaluation, Design Construction, Bigfork, Montana, October 1979-April 1980.
SOLAR/1029-80/14 1380

Impact of Land Use on Solar Industrial Process Heat for the Food Processing Industry.
UCRL-85019 1388

SOLAR THERMAL POWER PLANTS
Comparative Ranking of 0.1-10 MW/sub E/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
SERI/TR-351-461 1366

SOLAR WATER HEATERS
Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

Solar Energy System Performance Evaluation, Design Construction, Bigfork, Montana, October 1979-April 1980.
SOLAR/1029-80/14 1380

SOLAR WIND
Reprint: Origin of the Warped Heliospheric Current Sheet.
AD-A091 898/7 1292

A Study of the Association of Pc 3, 4 Micropulsations with Interplanetary Magnetic Field Orientation & Other Solar Wind Parameters.
AD-A092 369/8 1292

SOLDERING
Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391

SOLENOID VALVES
Solenoid Valves. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855462 1394

SOLID PROPELLANT ROCKET ENGINES
Qualification Test of the Thiokol TE-M-364-19 Solid-Propellant Rocket Motor (S/N 19006).
AD-B018 629/6 1456

Blast
Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436

SOLID PROPELLANTS
A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
AD-A092 148/6 1456

SOLID ROCKET PROPELLANTS
An Experimental Study of Solid Propellant Deflagration Using High Speed Motion Pictures and Postfire Residue Analysis.
AD-A092 423/3 1456

SOLID WASTE DISPOSAL
Reconnaissance Study of Leachate Quality from Raw Mined Oil Shale - Laboratory Columns.
PB81-129017 1386

Military Wastes-to-Energy Applications.
PB81-132227 1386

SOLIDIFICATION
Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.

AD-A092 251/8 1367

SOLIDS
Active Measurements of Defect Processes in Shock Compressed Metals and Other Solids.
SAND-80-1945C 1372

SOLUTION MINING
Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348

SOLUTIONS
Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433

SOLVENT EXTRACTION
Method for Improving Dissolution Efficiency in Gas-Absorption and Liquid Extraction Processes.
PAT-APPL-6-111 495 1337

SONAR
Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407

SONAR ARRAYS
A Study of Filled and Sparse Line Array Beamformers.
AD-A092 367/2 1407

SONAR PROJECTORS
Nonresonant Acoustic Projector Project. Mechanical 5-50 Hz Device Provides Stable Underwater Acoustic Output with Frequency and Amplitude Controllable and Independent of Depth.
AD-A092 181/7 1406

SONAR SOUND ANALYZERS
Implementation of the Phase Difference Trace Function for a Circular Array.
AD-A092 195/7 1407

Acoustical Deverberator.
PATENT-4 225 954 1407

SORPTION
Reprint: Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
PB81-129470 1339

SOUND PITCH
Efficient Coding of the Prediction Residual.
AD-A092 198/1 1408

SOUND TRANSDUCERS
Ultrasonic Transducers. July, 1974-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855363 1353

SOUND TRANSMISSION
Congrats Temperature and Salinity to Sound Speed Conversion.
AD-B022 435/2 1436

Ultrasonic radiation
Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437

SOUNDING ROCKETS
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292

Comparison of Electron Densities in the Middle Atmosphere Indicated by Rocket Borne Probing Techniques.
AD-A092 503/2 1294

SOUTH AFRICA
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374

SOUTH ATLANTIC OCEAN
U.S. Maritime Interests in the South Atlantic. Appendix I.
AD-B025 005/0 1302

U. S. Maritime Interests in the South Atlantic. Appendix II.
AD-B025 006/8 1302

SPACE CHARGE
Spacecraft Charging Standard Report.
AD-A091 953/0 1456

SPACE HEATING
Heat Exchangers for Space Heating. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851032 1380

SPACECRAFT
Spacecraft Charging Standard Report.
AD-A091 953/0 1456

Refrigeration systems
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
AD-902 944/8 1379

SPACECRAFT CHARGING
Spacecraft Charging Standard Report.
AD-A091 953/0 1456

SPACECRAFT COMPONENTS

Infrared detectors
Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/8 1379

Refrigeration systems
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part I. Thermodynamic Design and Study of Life-Limiting Components.
AD-891 461/6 1457

SPACECRAFT POWER SUPPLIES
Kilowatt Isotope Power System: Component Test Procedure for the Ground Demonstration System Radiator Bypass Valve.
DOE/ET/33001-T1 1430

Kilowatt Isotope Power System: Component Report for the Ground Demonstration System Accumulator.
DOE/ET/33001-T2 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Alternator Stator.
DOE/ET/33001-T3 1431

Kilowatt Isotope Power System: Test Procedure for the EHSA Multifoil Insulation. 77-KIPS-109.
DOE/ET/33001-T4 1431

Kilowatt Isotope Power System. Phase II Plan. Volume III. Addendum Evaluation Criteria.
DOE/ET/33001-T9 1431

Kilowatt Isotope Power System: Component Test Report for the Electric Heat Source Assembly. 77-KIPS-108.
DOE/ET/33001-T10 1430

Kilowatt Isotope Power System: Test Procedure for the Ground Demonstration System. 77-KIPS-63.
DOE/ET/33001-T11 1430

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Pump. 77-KIPS-99.
DOE/ET/33001-T13 1430

Kilowatt Isotope Power System: Test Report for the Radiator Long and Short Panels. 77-KIPS-112.
DOE/ET/33001-T14 1431

Dynamic Isotope Power System: Technology Verification Phase. Component Test Specification for the Ground Demonstration System Alternator Stator. 79-DIPS-41.
DOE/ET/33001-T26 1431

Component Test Procedure for the Ground Demonstration System Jet Condenser Focusing.
DOE/ET/33001-T29 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Accumulator. 77-KIPS-100.
DOE/ET/33001-T30 1431

Kilowatt Isotope Power System: Test Procedure for the Radiator. 78-KIPS-4.
DOE/ET/33001-T31 1431

Kilowatt Isotope Power System: Test Procedure for the Radiator Long and Short Panels. 77-KIPS-111.
DOE/ET/33001-T32 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Jet Condenser Orifice Performance. 77-KIPS-103.
DOE/ET/33001-T33 1431

Selenide Isotope Power System Design Review Presentation, November 10-11, 1977.
DOE/ET/33004-T1 1431

SPARK GAPS
Studies of Transient Discharges.
AD-A092 482/9 1437

SPECIALIZED TRAINING
Yrkesfoerarutbildningen Infoer 1980-Talet. Resultat fran Gruppdiskussioner med Laerare Inom Yrkesfoerarutbildningen Inom Gymnasieskola och Arbetsmarknadsutbildning (Professional Driver Training for the 1980's. Opinions and Experiences of Professional Driver Teachers),
PB81-128472 1307

SPECTRAL LINES
Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335

SPECTRALLY SELECTIVE SURFACES
Completion of a Prototype Installation for in-Line Coating by the Pyrosol Process for the Realization of Selective Glazings. Final Report.
EUR-6806-FR 1362

SPECTRUM ANALYSIS
Diagnostic Software Development for a Real-Time Spectral Analysis System.
AD-A092 441/5 1356

SPEECH
Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1408

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1408

SPEECH ANALYSIS
Speech Algorithm Optimization at 16 KBPS.
AD-A092 010/8 1407

Efficient Coding of the Prediction Residual.
AD-A092 198/1 1408

SPEECH GENERATION
Efficient Coding of the Prediction Residual.
AD-A092 198/1 1408

SPEECH RECOGNITION
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303

Interference
Voice Countermeasures Effectiveness Analysis.
AD-912 392/8 1410

SPEECH SYNTHESIS
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303

SPEED LIMITS
A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385

SPENT FUEL STORAGE
Spent Fuel Data for Waste Storage Programs.
HEDL-TME-79-20 1424

Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
UCRL-84153 1425

SPENT FUELS
Fission Product Release. Progress Report, April 1-June 30, 1980.
LA-8539-PR 1424

Spent Nuclear Fuel Recovery. May, 1972-February, 1980 (Citations from the NTIS Data Base).
PB81-850687 1430

SPENT SEED
Study of Seed Reprocessing Systems for Open Cycle Coal Fired MHD Power Plants.
DOE/ET/15613-T1 1364

SPENT SHALES
Sorption of H sub 2 S on Spent Shale in Packed Beds.
DOE/LC/10020-T4 1454

Preparation of Grout for Stabilization of Abandoned In-situ Oil Shale Retorts.
PAT-APPL-6-101 364 1383

SPIN STABILIZED AMMUNITION
Ball Obturation of a Spin Stabilized Tubular Projectile.
AD-A092 410/0 1432

SPINAL CORD
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321

SPINAL CORD INJURIES
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321

SPINAL INJURIES
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321

SPOIL BANKS
Revegetation of Alaskan Coal Mine Spoils. Progress Report.
DOE/EV/10256-1 1345

SPUTTER-ION PUMPS
Pumping Behavior of Sputter Ion Pumps.
BNL-28292 1441

SRC-II PROCESS
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

Solvent Refined Coal (SRC) Process.
DOE/ET/10104-T4(V.1) 1330

SRC PROCESS
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

SRI LANKA
Postharvest Food Losses in Sri Lanka; Report of a Workshop, 11-16 February 1980.
PB81-129975 1323

STABILITY
Inflatable Liferaft Stability Study.
AD-A091 986/0 1323

STABILIZATION SYSTEMS
Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357

STAINLESS STEEL
An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.

AD-A092 307/8 1368

STAINLESS STEEL-17-4PH
Ultrasonic Measurement of Elastic Moduli of 17-4 pH Stainless Steel and Uranium -2 Molybdenum from -40 exp 0 C to 800 exp 0 C.
SAND-80-1121 1372

STAINLESS STEEL-304
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

STAINLESS STEEL-304L
Tests on Mechanical Behavior of 304 L Stainless Steel under Constant Stress Associated with Cyclic Strain.
CEA-CONF-4801 1370

STAINLESS STEEL-316
State Variable Description of 316 SS Post-Irradiation Mechanical Properties.
HEDL-SA-2174 1429

STANDARDIZATION
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400

STANDARDS
Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449

STAPLETON INTERNATIONAL AIRPORTS
Task Force Delay Study. Denver Stapleton International Airport, Volume II.
AD-A092 456/3 1291

STATE OF THE ART
A 20 Years' Survey of Laser Science and Technology in China. II--Translation.
AD-A092 097/5 1439

A Feasibility Study for Advanced Technology Integration for General Aviation.
AD-A092 437/3 1289

STATE PROGRAM
Telemedia Research and Innovation. Telecommunications Study Commission.
ED-183 208 1410

STATE PROGRAMS
Higher Education Uses of Telemedia in Virginia. Telecommunications Study Commission.
ED-183 206 1409

STATIC ELECTRICITY
Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437

Launch vehicles
Titan Vehicle Electrostatic Environment.
AD-913 898/3 1457

STATIC STABILITY
Bomb fins
Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B007 733/9 1438

STATIC TESTS
Reprint: Modification of the Hillig-Charles Theory for Static Fatigue of Glass.
AD-A092 492/8 1367

STATISTICAL ANALYSIS
Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449

STATISTICAL SAMPLES
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377

STATISTICAL TESTS
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377

STATISTICS
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377

STATORS
Dynamic Isotope Power System: Technology Verification Phase. Component Test Specification for the Ground Demonstration System Alternator Stator. 79-DIPS-41.
DOE/ET/33001-T26 1431

STEAM GENERATORS
Improvements to the COBRA-TF (EPRI) Computer Code for Steam Generator Analysis. Final Report.
EPRI-NP-1509 1427

GCFR Steam Generator Conceptual Design.
GA-A-15894 1426

STEAM INJECTION
Development and Field Testing of a Process for Recovering Heavy Crude Oil in the Carlyle Pool-Allen County, Kansas Using the Vapor Therm Generator. Final Report.
DOE/BETC-2880-1 1344

STEAM REFORMER PROCESSES
Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
DOE/ET/15383-18 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
DOE/ET/15383-22 1364

STEEL
Calculation of the Oxide Growth Rate of 2-1/4 Cr - 1 Mo Steel in Air and the Subsequent Measurement of the Strain Required to Crack the Oxide.
AD-A092 302/9 1370

Welding
Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370

STEEL HY-180
Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370

STEERING
Steering System Survey for Surface Mining Equipment.
PB81-130866 1348

STEPPER MOTORS
Stepper Motors. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855132 1358

STEREOPHOTOGRAMMETRY
Data processing
Off-Line Orthographic Printer.
AD-919 575/1 1399

STEREOSCOPIC MAP PLOTTERS
Radar
AS-11/B Stereoplotter Experiments and Studies.
AD-900 360/9 1341

STOCHASTIC CONTROL
Reprint: Stochastic Control Under Partial Observations.
AD-A092 187/4 1376

STOCHASTIC PROCESSES
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
AD-A092 163/5 1375

Assessing Risks through the Determination of Rare Event Probabilities.
AD-A092 192/4 1376

Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376

A Manual for Encoding Probability Distributions.
AD-A092 259/1 1378

State Space Models for Gaussian Stochastic Processes.
AD-A092 388/8 1377

STORAGE
Ordnance
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 684/2 1433

STORM WATER RUNOFF
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344

STORMS
A Statistical Study of Monthly Storminess and Sea Surface Temperature Anomalies over the North Pacific Ocean.
AD-A092 134/6 1349

STRAIN GAGES
Apparatus for Installing Condition-Sensing Means in Subterranean Earth Formations.
PAT-APPL-6-101 370 1396

STRAIN (MECHANICS)
Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
AD-A091 962/1 1288

STRAIN RATE
Calculation of the Oxide Growth Rate of 2-1/4 Cr - 1 Mo Steel in Air and the Subsequent Measurement of the Strain Required to Crack the Oxide.
AD-A092 302/9 1370

STRAPPED DOWN SYSTEMS
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412

STRATEGIC ANALYSES
U.S. Maritime Interests in the South Atlantic. Appendix I.
AD-B025 005/0 1302

U. S. Maritime Interests in the South Atlantic. Appendix II.
AD-B025 006/8 1302

STRATEGIES
Report on Cardiac Catheterization and Open Heart Surgery Services.
HRP-0902557/8 1320

STRATEGY
Food System Support of the Relocation Strategy in California. Volume I. Analysis.
AD-A092 056/1 1400

STRATIFIED CHARGE ENGINES
Influence of Air Motion Variation on the Performance of a Direct-Injection Stratified-Charge Engine.
SAND-79-8756 1456

STRATOSPHERE
Dynamic Interactions between the Troposphere and Stratosphere.
AD-A092 420/9 1295

STREAM FLOW
Green River Basin Flow Forecasting Models.
PB81-124448 1343

The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387

The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387

The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-138141 1387

The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
PB81-138158 1387

The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
PB81-138166 1387

STRENGTH (PHYSIOLOGY)
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

STREPTOCOCCAL PNEUMONIA
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

STRESS CORROSION
Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
AD-A092 186/6 1369

STRESS (PHYSIOLOGY)
Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327

STRESS (PSYCHOLOGY)
Illness Behavior in Mid-Life Women. Executive Summary.
PB81-125536 1309

STRESS STRAIN RELATIONS
Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
AD-A092 473/8 1370

STRESS WAVES
Effect of Cross Grain on Stress Waves in Lumber.
AD-A091 949/8 1374

STRESSES
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449

Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367

STRIATIONS
A New Theory for Striations with Experimental Verifications.
AD-A092 058/7 1447

STRONTIUM
Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
DOUNREAY-TRANS-826 1337

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.

GJBX-185(80) 1346

STRONTIUM FLUORIDES
Calculation of the Electronic Structure and Contact Hyperfine Parameters of Interstitial Hydrogen in Alkaline - Earth Fluorides.
INIS-mf-5646 1451

Calculation of the Hyperfine Constants of the V /sub K/ Center in CaF sub 2 , SrF sub 2 and BaF sub 2.
INIS-mf-5647 1451

STRUCTURAL ANALYSIS
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

STRUCTURAL MEMBERS
Manufacturing
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

STRUCTURES
Operation GREENHOUSE. Scientific Director's Report. Annex 3.0. The Test of Structures.
AD-B951 735/0 1421

A Response Spectrum Method for Random Vibrations.
PB81-122301 1394

SU-2 GROUPS
Discrete Subgroups of the Three-Dimensional Rotation Group.
JINR-R-5-12459 1449

SUBMARINE EQUIPMENT
Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
AD-A091 909/2 1392

SUBMARINES
Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855082 1393

SUBMILLIMETER WAVES
Reprint: A Double-Ended, Unstable Resonator Submillimeter Laser.
AD-A092 044/7 1439

SUBROUTINES
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356

SUBSAHARAN AFRICA
Brotherhood-in-Arms East German Foreign Policy in Africa 'Kalashnikoffs, not Coca Cola Bring Self-Determination to Angola' Volksarme, 1978.
AD-A092 402/7 1302

SUBSONIC FLOW
PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438

SUBSURFACE DRAINAGE
The Effectiveness of Horizontal Drains.
PB81-124851 1384

SULFATES
Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
AD-A092 419/1 1334

SULFIDES
Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294

SULFUR
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334

Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294

SULFUR 32 REACTIONS
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

SULFUR DIOXIDE
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335

Atmospheric Oxidation of Sulfur Dioxide as Viewed from Power Plant and Smelter Plume Studies.
BNL-28347 1335

Mobile Ambient Air Monitor.
RFP-3010 1398

SUPERCONDUCTING CABLES
Bend Strain Tolerances of a Nb sub 3 Sn Conductor Proposed for Use in the Magnetic Fusion Energy Program.
BNL-28375 1414

SUPERCONDUCTING MAGNETS
Protection for Low Current Superconducting Coils Wound with Insulated Strand Cable.
CONF-800980-20 1352

Team One (GA/MCA) Effort of the DOE 12 Tesla Coil Development Program. 12 Tesla ETF Toroidal Field Coil Helium Bath Cooled NbTi Alloy Concept.
GA-A-15974 1416

Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
GA-A-16013 1416

SUPERCONDUCTIVITY
Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
AD-A091 997/7 1450

Reprint: Space Applications of Superconductivity: Resonators for High Stability Oscillators and Other Applications.
PB81-119844 1353

SUPERCONDUCTORS
Characterization of Superconductors by Surface Wave Techniques.
AD-A092 387/0 1450

SUPERGRAVITY
Soft-Group-Manifold Structure of Supergravity, and the Proof of Unitarity.
DOE/ER/03992-417 1448

SUPERSONIC AIRCRAFT
Transonic characteristics
High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
AD-886 531/3 1289

SUPERSONIC FLOW
Viscous Flow over Arbitrary Geometries at High Angle of Attack.
AD-A091 971/2 1438

PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438

A Finite Element Mach Box Procedure for Flutter Predictions of Panels in Three-Dimensional Supersonic Unsteady Potential Flow.
AD-B017 944/0 1438

SUPERSONIC NOZZLES
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454

SUPPLY DEPOTS
Type II Forward Storage Site Facilities. POMCUS System. Volume 1.
AD-A092 310/2 1401

SURFACE CHEMISTRY
Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449

On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
AD-A092 118/9 1333

Gas Surface Dynamics, High Power Laser-Solid Interactions.
AD-A092 183/3 1333

Reprint: Statistical Thermodynamics of Bulk and Surface Properties of Polymer Mixtures,
PB81-126153 1338

Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339

SURFACE EFFECT SHIPS
SES Multi-Purpose Ship Study. Transport Application. Volume 1. Technical Summary.
AD-A091 948/0 1392

SURFACE MINING
Marketing of Coal Mining Equipment. Evaluation of Present Techniques: Suggestions to Aid Commercialization. Final Report.
DOE/RA/20014-T1 1345

SURFACE NAVIGATION
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412

SURFACE ROUGHNESS
Modal Analysis for Aircraft Response to Runway Surface Roughness.
AD-A092 057/9 1290

SURFACE TEMPERATURE
A Statistical Study of Monthly Storminess and Sea Surface Temperature Anomalies over the North Pacific Ocean.
AD-A092 134/6 1349

SURFACE TO SURFACE MISSILES
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342

SURFACE WATERS
Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
PB81-127391 1385

SURFACE WAVES
Characterization of Superconductors by Surface Wave Techniques.
AD-A092 387/0 1450

SURFACES
Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354

A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373

Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370

Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
LYCEN-7868 1373

SURGICAL TRANSPLANTATION
Assessment of Non-Invasive Methods of Measuring Bone Repair in Naval Casualty Victims.
AD-A092 145/2 1318

SURVEYS
Training Manual for Interviewers.
PB81-139115 1311

Field Supervisor Manual.
PB81-139123 1312

Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139149 1312

Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139156 1312

Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139164 1312

Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139172 1312

Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139206 1313

Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139255 1313

Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139263 1313

Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139396 1314

Supplemental Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139404 1314

Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139420 1314

Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139438 1314

SWEEPFREQUENCY RADAR
An Investigation of HF Direction-Finding Accuracy on the Churchill-Ottawa Auroral Zone Path.
AD-A092 311/0 1410

SWEPT WINGS
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288

SWEPTFREQUENCY RADAR
An Investigation of HF Direction-Finding Accuracy on the Frobisher Bay-Ottawa Auroral Zone Path.
AD-A092 312/8 1410

SWIMMING
Swimming Tests of Wheeled and Tracked Vehicles.
AD-A092 393/8 1434

SWITCHING CIRCUITS
Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361

Communication equipment
Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.

AD-892 041/5 1359

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
AD-892 042/3 1359

SYMPOSIA

Proceedings of the TRADOC/Training Developments Institute Chiefs of Anlaysis Seminar (4th) Held in Hampton, Virginia, 16-18 July 1980.
AD-A092 035/5 1304

Defense Planning and Arms Control. Proceedings of a Special NSAI Conference, 12-14 June 1980, National Defense University, Washington, DC.
AD-A092 168/4 1400

SYNCHRONOUS SATELLITES

Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456

SYNOPTIC METEOROLOGY

Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
AD-A092 318/5 1413

SYNTHESIS (CHEMISTRY)

Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331

Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331

Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331

Improved Synthesis of 2,4-Diamino-6-Hydroxymethylpteridine.
PAT-APPL-6-133 788 1332

Water Soluble Forms of Retinoids.
PAT-APPL-6-170 570 1332

Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369

Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
PAT-APPL-6-181 465 1332

Perfluorocompounds.
PAT-APPL-6-182 562 1374

Perfluorinated Epoxides.
PAT-APPL-6-182 563 1374

Perfluorocarbon Ethers.
PAT-APPL-6-182 564 1374

Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332

Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332

Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332

Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

Polynuclear Aromatic Compounds. Synthesis and Purification.
PB81-125015 1332

SYNTHESIS GAS

Catalytic Conversion of Oxygenated Compounds to Low Molecular Weight Olefins. Progress Report for the Period March 1, 1980 to August 31, 1980.
DOE/PC/04717-5 1331

SYNTHETIC FIBERS

Synthetic Fibers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855397 1369

SYNTHETIC FUELS

Proceedings of Brookhaven National Laboratory's Fusion/Synfuel Workshop.
BNL-51188 1414

SYNTHETIC FUELS INDUSTRY

Gas Reactor International Cooperative Program. HTR-Synfuel Application Assessment.
COO-4057-12 1427

High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428

SYSTEMS ANALYSIS

Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851008 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851016 1388

SYSTEMS MANAGEMENT

Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
AD-A092 054/6 1296

TACTICAL AIR COMMAND

Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
AD-A092 054/6 1296

TACTICAL ANALYSES

Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.
AD-A091 956/3 1308

TACTICAL COMMUNICATIONS

Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
AD-A092 054/6 1296

Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408

Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408

Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408

TACTICAL DATA SYSTEMS

Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408

Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408

User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403

Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408

TACTICAL WARFARE

Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403

TACTICAL WEAPONS

Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400

TANK CREWS

Preliminary Outline of Crew Duties and Tasks for Operation of the M60A1E1/E2.
AD-A950 107/3 1434

US/FRG MBT-70 Crew Functional Procedures and Performance Standards.
AD-A950 109/9 1434

TANK GUNS

Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436

TANKERS

Correlation of Model Experiments with Ship Powering Data for Three Tankers Represented by Models 9006, 9007, 9008, and 9009.
AD-A091 940/7 1392

TANKS (COMBAT VEHICLES)

An HP-67 Combat Model.
AD-A091 992/8 1402

Tank Wars General Information Manual.
AD-A092 350/8 1434

TANTALATES

SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
LYCEN-7923 1451

TANTALUM

Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

TANTALUM 181 TARGET

Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
JINR-R-1-12125 1445

TANTALUM ALLOYS

Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372

TANTALUM CARBIDES

Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

TANTALUM FLUORIDES

Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

TAPE RECORDERS

Flutter

Analysis of the Power Spectral Density of Tape Recorder Flutter.
AD-B010 481/0 1399

TARGET ACQUISITION

Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308

Effect of Response Mode on Target Identification.
AD-A092 381/3 1412

Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403

TARGET ANNOTATION

INTERAND Target Annotation System.
AD-B001 109/8 1435

TARGET RECOGNITION

Target Recognition System Design: Computational Structures with Response Time Characteristics Dictated by the Operational Environment.
AD-B041 709/7 1413

TARGETING

Aircraft fire control systems

INTERAND Target Annotation System.
AD-B001 109/8 1435

TATLOCK BACTERIUM

Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318

TAXICABS

Passenger Transport Innovation in Adelaide: Taxi-Cabs.
PB81-125460 1384

TBM (TUNNEL BORING MACHINES)

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380

TE-M-364-19 ENGINES

Qualification Test of the Thiokol TE-M-364-19 Solid-Propeliant Rocket Motor (S/N 19006).
AD-B018 629/6 1456

TEARING INSTABILITY

Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
EUR-CEA-FC-1013 1416

TECHNETIUM

Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
CONF-801038-4 1423

Assessment of Potential Radionuclide Transport in Site-Specific Geologic Formations.
SAND-79-2468 1425

TECHNOLOGY

National Resource Center Operational Feasibility and Use Study, Volume 1,
PB81-125304 1299

National Resource Center Operational Feasibility and Use Study, Volume 2, Appendix D,
PB81-125312 1299

TECHNOLOGY FORECASTING

Forecast of Remote Underwater Sensing Technology.
AD-A092 390/4 1407

TECHNOLOGY TRANSFER

Manufacturing Methods and Technology Program Plan, CY 1980.
AD-A092 243/5 1390

Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
AD-A092 469/6 1396

Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.
PB81-125387 1300

TEETH

A Technique for Staining Extracted Teeth: A Research and Teaching Aid for Bleaching.
AD-A092 358/1 1319

TELECOMMUNICATION

Higher Education Uses of Telemedia in Virginia. Telecommunications Study Commission.
ED-183 206 1409

Telemedia Research and Innovation. Telecommunications Study Commission.

ED-183 208 1410

TELECOMMUNICATION CIRCUITS
Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

TELEPHONE LINES
Pulse communications
Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
AD-B000 632/0 1409

TELEVISION CAMERAS
Experimental Study of Contrast Utilizing a Vidicon.
AD-A092 407/6 1351

Dynamic Color Scanner System.
AD-B015 629/9 1352

Infrared detectors
'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411

TELEVISION DISPLAY SYSTEMS
Signal Processing Circuit Development.
AD-A092 371/4 1411

Effect of Response Mode on Target Identification.
AD-A092 381/3 1412

Graphics
INTERAND Target Annotation System.
AD-B001 109/8 1435

TELEVISION GUIDANCE
Optical target designators
'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411

TELLURIUM 130 TARGET
Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443

TELLURIUM 132
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

TELLURIUM 134
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

TEM PHASE SHIFTERS
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
AD-912 789/5 1360

TEMPERATURE
Reprint: On Production and Dissipation of Thermal Variance in the Oceans.
AD-A092 486/0 1349

TEMPERATURE MEASUREMENT
Thermocouple Applications. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855157 1398

TEMPERATURE MEASURING INSTRUMENTS
Infrared Thermometry and the Teletemp 44 as a Ship System Maintenance Monitoring Tool.
AD-B018 764/1 1393

TENNESSEE
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Memphis Quadrangle, Arkansas, Missouri, and Tennessee. Final Report.
GJBX-178(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Nashville Quadrangle, Tennessee, and Kentucky. Final Report.
GJBX-202(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Tupelo Quadrangle, Mississippi, Alabama, and Tennessee. Final Report.
GJBX-203(80) 1346

TERBIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

TERMINAL BALLISTICS
A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
AD-B015 193/6 1433

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435

Fragmentation ammunition
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435

TERRAIN
Profilometers. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851719 1398

TERTIARY HEALTH CARE
Estimation of Spatial Demand for Hospital Services.
PB81-135790 1322

TEST FACILITIES
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
AD-A092 229/4 1454

Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

TEST FIXTURES
Variable sweep wings
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

TEST METHODS
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
AD-A091 945/6 1369

1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

Radiation Evaluation of the AM2901A Microprocessor.
AD-A092 415/9 1356

TEST SETS
K band
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409

TEXAS
Aerial Radiometric and Magnetic Survey, San Angelo National Topographic Map: Texas, West Texas Project. Final Report.
GJBX-168(80) 1346

TEXT PROCESSING
Design and Implementation of an Integrated Screen-Oriented Text Editing and Formatting System.
AD-A092 180/9 1297

TEXTILE FINISHING
Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369

TEXTILE INDUSTRY
UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385

TEXTILE PROCESSES
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369

TFR TOKAMAK
Research on TFR.
CEA-CONF-4696 1414

TFTR REACTORS
Neutronics Calculations for the TFTR Neutron Calorimeter.
PPPL-1695 1418

Material Selection for TFTR Limiters.
PPPL-1719 1418

THALLIUM 185
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

THALLIUM 186
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

THALLIUM 187
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

THEATER LEVEL OPERATIONS
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403

THEORY
Convergence Theory for Unconstrained Minimization.
AD-A092 254/2 1376

THERMAL ANALYSIS
Thermal Analysis and Design of Air Cooled Electronic Circuit Boards Using a Desktop Computer.
AD-A092 309/4 1359

THERMAL DEGRADATION
Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388

THERMAL INSULATION
Kilowatt Isotope Power System: Test Procedure for the EHSA Multifoil Insulation. 77-KIPS-109.
DOE/ET/33001-T4 1431

Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395

THERMAL POLLUTION
Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
PB81-132052 1323

THERMAL POWER PLANTS
Reprint: Analysis of Gas Dissociation Solar Thermal Power System.
AD-A091 982/9 1363

Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379

THERMAL SHIELDS
Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367

THERMIONIC CONVERTERS
DOE/JPL Advanced Thermionic Technology Program. Progress Report No. 42.
COO-3056-56 1364

THERMIONIC POWER GENERATION
Aircraft engines
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360

THERMOCHEMISTRY
Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

THERMOCOUPLES
Thermocouple Applications. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855140 1398

Thermocouple Applications. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855157 1398

THERMODYNAMIC PROPERTIES
Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332

Characterization of Superconductors by Surface Wave Techniques.
AD-A092 387/0 1450

THERMODYNAMICS
HOTRAN-3 Program for Reactor Core Thermohydraulic Studies in the Three-Channel Approximation.
KFKI-1979-26 1428

Reprint: Statistical Thermodynamics of Bulk and Surface Properties of Polymer Mixtures,
PB81-126153 1338

THERMOELECTRIC GENERATORS
Selenide Isotope Power System Design Review Presentation, November 10-11, 1977.
DOE/ET/33004-T1 1431

THERMOELECTRIC POWER GENERATION
Reprint: Analysis of Gas Dissociation Solar Thermal Power System.
AD-A091 982/9 1363

THERMOLUMINESCENCE
Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335

Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

THERMONUCLEAR DEVICES
Theory of the Arc Discharge in Air Blast Breakers.
LA-8488-T 1417

THERMONUCLEAR REACTOR COOLING SYSTEMS
MHD Pressure Losses in Pipeline Systems for Toroidal Fusion Reactors.
IPP-4/180 1417

THERMONUCLEAR REACTOR MATERIALS
Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
CONF-801011-14 1415

Investigation of Non-Magnetic Alloys for the Suppression of Tritium Permeation.
DOE/ER/10087-T2 1415

THERMONUCLEAR REACTORS
Proceedings of Brookhaven National Laboratory's Fusion/Synfuel Workshop.
BNL-51188 1414

Symbolic Software for CTR Research.
UCRL-15284 1419

THERMOPLASTIC RESINS
The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
AD-A092 105/6 1373

THERMOPLASTICS
Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual.
PB81-139370 1374

Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F),
PB81-139388 1374

THICK FILMS
Hybrid systems
Some Applications of Hybrid Thick Film Technology.
AD-917 846/8 1360

THIN FILMS
Waveguides
Thin Film Optical Waveguide Technology.
AD-919 567/8 1352

THIOPHENE
Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, July-September 1980.
DOE/ET/13395-6 1453

THORIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

THORIUM 232 TARGET
New Results on the Spectroscopy and Dynamics of Fission.
DOE/ER/01388-452 1443

THORIUM OXIDES
Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

THREE-BODY PROBLEM
Non-Orthogonal Harmonic-Oscillator Basis for Three-Body Problems.
IFT-P-11/79 1444

THREE DIMENSIONAL
Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354

THREE MILE ISLAND-2 REACTOR
Preliminary Comparisons Between Measurements and Model Calculations for the TMI Venting of exp 85 Kr.
UCID-18783 1426

Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

THRUST
Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392

THRUST BEARINGS
Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
AD-A091 909/2 1392

THYROID
Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327

TICKBORNE DISEASES
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319

TICKS
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316

Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319

Reprint: The Subgenius Persicargas (Ixodoidea; Argasidae; Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
AD-A092 462/1 1316

Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327

TIMBER CONSTRUCTION
Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395

TIME DELAY FUZES
XM714 Delay Fuze Tests.
AD-B024 828/6 1433

TIME SERIES ANALYSIS
The Study of Production Leadtime Forecasting Models.
AD-A091 970/4 1390

TIN
Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

TIN 116 TARGET
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

TIN 119
Moessbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371

TIN 128
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

TIN 129
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

TIN 130
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

TIN ALLOYS
Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

TIN COMPOUNDS
Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

TIN OXIDES
Completion of a Prototype Installation for in-Line Coating by the Pyrosol Process for the Realization of Selective Glazings. Final Report.
EUR-6806-FR 1362

TITANIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

TITANIUM ALLOYS
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368

The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
AD-A092 247/6 1369

Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
AD-A092 473/8 1370

Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

TITANIUM BORIDES
Material Selection for TFTR Limiters.
PPPL-1719 1418

TITANIUM CARBIDES
Material Selection for TFTR Limiters.
PPPL-1719 1418

TITANIUM COMPOUNDS
An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
AD-A092 307/8 1368

TIVOLI LAKE DAM
National Dam Safety Program. Tivoli Lake Dam (Inventory Number N.Y. 52), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 219/5 1381

TMR REACTORS
Buildup Studies of a Tandem Mirror Reactor with Inboard Thermal Barriers.
UCRL-84233 1419

Technology of Direct Conversion for Mirror Reactor End-Loss Plasma.
UCRL-84235 1419

Negative Deuterium Ions for Tandem Mirror Next Step and Tandem Mirror Reactors.
UCRL-84888 1420

TNT
Analytical Chemistry of 2,4,6-Trinitrotoluene.
AD-A092 348/2 1432

TOKAMAK DEVICES
Ballooning Mode Second Stability Region for Sequences of Tokamak Equilibria.
DOE/ET/53073-T1 1416

Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
EUR-CEA-FC-1013 1416

Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
IFUSP-P-180 1448

Plasmator. A Numerical Code for Simulation of Plasma Transport in Tokamaks.
JEN-459 1417

Peculiarities of Radiation Heat Transfer of Structural Elements of High-Temperature Physical Installations.
NIIEFA-P-A-0424 1417

Analysis of the System of Poloidal Fields in the "T-10M" Device.
NIIEFA-P-B-0430 1417

Currents Induced in Tokamaks by Electron Cyclotron Heating.
ORNL/TM-7503 1418

Mode Converter for Electron Cyclotron Resonance Heating of Toroidal Plasmas.
PPPL-1697 1418

Disruptive Shift of Magnetic Axis in Non-Circular Tokamaks.
PPPL-1707 1418

Anomalous Transport Due to Shear-Alfven Waves.
PPPL-1709 1418

Impurity Ions in a Rotating Tokamak.
PPPL-1710 1434

Second Region of Stability.
PPPL-1715 1448

Analytical Study of the External Field for Non-Circular Tokamak with Multipole Moment Expansion Approach.
PPPL-1718 1418

TOKAMAK ETF
ETF Interim Design Review.
CONF-800770-1 1414

ETF System Code: Composition and Applications.
CONF-801011-5 1415

ETF Design Activities: Status and Future Direction.
CONF-801011-15 1415

ETF Reactor Design Status.
CONF-801037-21 1415

Engineering Test Facility (ETF) At Oak Ridge National Laboratory (ORNL).
DOE/TIC-11282 1416

Team One (GA/MCA) Effort of the DOE 12 Tesla Coil Development Program. 12 Tesla ETF Toroidal Field Coil Helium Bath Cooled NbTi Alloy Concept.
GA-A-15974 1416

Vacuum Pumping Concepts for ETF.
GA-A-16071 1393

Preliminary Radiation Criteria and Nuclear Analysis for ETF.
GA-A-16072 1416

R And D Needs Assessment for the Engineering Test Facility.
ORNL/TM-7122 1417

Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.
ORNL/TM-7124(Dr) 1417

TOKAMAK TYPE REACTORS
First Wall Engineering and Technology in Fusion.
GA-A-16089 1416

Ignition Experiment - Alternatives.
IPP-4/179 1416

Maximum Attainable Power Density and Wall Load in Tokamaks Underlying Reactor Relevant Constraints.
IPP-4/182 1417

Preconceptual Design and Assessment of a Tokamak Hybrid Reactor.
PNL-2720 1418

Structural Evaluation of a DTHR Bundle Divertor Particle Collector.
WFPS-TME-78-100 1420

TOKAPOLE DEVICES
Abstracts of Papers Presented at the Twenty-Second Annual Meeting of the Division of Plasma Physics of the American Physical Society.
DOE/ET/53051-8 1416

TOLUIDINES
Toluidine Blue Rinse for the Detection of Squamous Carcinoma of the Oral Cavity and Other Structures Composition and Method.
PAT-APPL-6-105 079 1325

TOPOGRAPHY
Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362

TORNADOES
The Lubbock, Texas, Tornado May 11, 1970. A Report to the Administrator.
PB81-137788 1295

TORPEDO TRAJECTORIES
An Application of Kalman Filtering to Torpedo Tracking.
AD-A092 303/7 1407

TOUGHNESS
Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
AD-A092 253/4 1367

TOURMALINE
Effect of Thermal Neutron Irradiation on the Elastic Moduli and Structure of Boron-Containing Crystals. Final Report for the Period 1 October 1976-30 September 1979.
IAEA-R-1800-F 1450

TOXAPHENE
Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

TOXIC SUBSTANCES
Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text,
HRP-0902234/4 1320

Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329

Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329

Acute Oral Toxicity Studies in Rats and Rabbits,
PB81-139339 1329

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two Year Oral Toxicity Study in Rats. Report Number 2E.
PB81-139347 1329

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two year Oral Toxicity Study in Rats. Report Number 2F.
PB81-139354 1330

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. One Year Oral Toxicity Study in Monkeys. Report Number 3E.
PB81-139362 1330

TOXICITY
Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
AD-A092 249/2 1328

TOXICOLOGY
Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329

Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329

Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

Acute Oral Toxicity Studies in Rats and Rabbits,
PB81-139339 1329

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two Year Oral Toxicity Study in Rats. Report Number 2E.
PB81-139347 1329

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two year Oral Toxicity Study in Rats. Report Number 2F.
PB81-139354 1330

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. One Year Oral Toxicity Study in Monkeys. Report Number 3E.
PB81-139362 1330

TPT EXPLOSIVE
A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432

TRACE ELEMENTS
Implementation of the Phase Difference Trace Function for a Circular Array.
AD-A092 195/7 1407

Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385

Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385

TRACKED VEHICLES
Analytical Model for the Turning of Tracked Vehicles in Soft Soils.
AD-A092 277/3 1434

Swimming Tests of Wheeled and Tracked Vehicles.
AD-A092 393/8 1434

TRACKING
Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357

The Effects of the Direction of Control Loading on a One-Dimensional Tracking Task.
AD-A092 459/7 1288

TRAFFIC
Bereikbaarheid als Vestigingsplaatsfaktor voor Bedrijven (Attainability as a Location Factor for Industry),
PB81-125635 1300

TRAFFIC NOISE
Propagation of Traffic Noise.
PB81-123523 1389

TRAFFIC SAFETY
Wildlife Research Report. Part One.
PB81-124638 1384

Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas),
PB81-130775 1394

TRAINING AMMUNITION
Yaw Card Range Tests of a 30mm Frangible TP Projectile.
AD-B013 355/3 1432

30MM GAU-8/A Plastic Frangible Projectile.
AD-B027 446/4 1433

TRAINING DEVICES
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303

Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303

Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304

TRAINING SIMULATORS
Bus Driver Training Simulator Assessment.
PB81-128977 1307

TRANSCALENT RECTIFIERS
Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
AD-A092 078/5 1351

Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351

TRANSDUCERS
MILES Pressure/Seismic Response Engineering Development of MILES Test Fixture.
AD-A092 200/5 1400

A New Angular Displacement Transducer.
AD-C019 184/1 1396

TRANSFERASES
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

TRANSIENT OVERPOWER ACCIDENTS
Failure Analysis of Carbide Fuels under Transient Overpower (TOP) Conditions.
HEDL-SA-2006-FP 1429

TRANSISTOR TRANSISTOR LOGIC
Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
AD-A091 952/2 1359

TRANSISTORS
Electronic switches
Modulator Driver Transistor.
AD-917 847/6 1352

TRANSITION METALS
Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
AD-A092 119/7 1333

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
AD-A092 336/7 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
AD-A092 337/5 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
AD-A092 338/3 1334

TRANSMISSION LINES
Reprint: Spectral Domain Analysis of Dominant and Higher Order Modes in Fin-Lines.
AD-A092 120/5 1351

TRANSMISSIVITY
Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

TRANSMISSOMETERS
Laser Transmissometer, Installation, Alignment and Instruction Manual.
AD-A092 041/3 1395

TRANSONIC AIRFOILS
Design
High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
AD-886 531/3 1289

TRANSONIC FLOW
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454

Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396

TRANSPLUTONIUM ELEMENTS
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(Dr) 1420

TRANSPORTATION
Energy Use in Transportation. Selected References.
AD-A092 157/7 1361

Exemptions to the Fair Labor Standards Act - Transportation Sector.
PB81-127441 1307

Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851008 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851016 1388

TRANSPORTATION MANAGEMENT
Energy Emergency Contingency Plan.
PB81-128704 1363

TRANSPORTATION SYSTEMS
Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388

TRANSVERSE WAVES
Reprint: Guided Solitary Waves.
AD-A092 047/0 1341

TRAVELING WAVE TUBES
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

TRENDS
Schools of Public Health Trends in Graduate Education,
HRP-0902582/6 1306

TRETINOIN
Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 594 1325

TRITIUM
Investigation of Non-Magnetic Alloys for the Suppression of Tritium Permeation.
DOE/ER/10087-T2 1415

TROPHIC LEVEL
A Trophic Classification of Minnesota Lakes Based on Lake Sediments.

PB81-124141 1343

TROPICAL CYCLONES
Improvement in Tropical Cyclone Forecasts by Multiple Linear Regression Equation Adjustment of Analog Tracks.
AD-A092 139/5 1294

A Statistical Analysis of Western North Pacific Ocean Tropical Cyclone Danger Area Forecasts.
AD-A092 408/4 1295

TROPICAL TESTS
The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
AD-A091 867/0 1373

The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
AD-A092 105/6 1373

TROPOSPHERE
Dynamic Interactions between the Troposphere and Stratosphere.
AD-A092 420/9 1295

TROPOSPHERIC SCATTER COMMUNICATIONS
Adaptive Antenna Control (AAC) Program.
AD-A092 030/6 1407

TROUT
Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant,
PB81-130049 1322

TUBULAR PROJECTILES
Ball Obturation of a Spin Stabilized Tubular Projectile.
AD-A092 410/0 1432

TUMOR CELLS
Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326

TUMOR PROMOTERS
Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.
CONF-8010108-2 1319

TUNABLE LASERS
One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
AD-A092 189/0 1333

TUNGSTEN
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Form Factor and Multistep-Transfer Effects in Light-Ion and Heavy-Ion Induced Transfer Reactions on Rotational and Transitional Nuclei.
BUP-104 1442

Range Profiles of Low Energy (100 to 1500 EV) Implanted exp 3 He and exp 4 He in Tungsten. II. Analysis and Discussion. Materials Science Center Report No. 4108.
DOE/ER/03158-73 1336

TUNGSTEN ALLOYS
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

TUNNELING
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380

TURBINE BLADES
100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
DOE/NASA/9235-75/3 1362

Effects of Flow Curvature on the Aerodynamics of Darrieus Wind Turbines.
ORO-5135-77/7 1362

TURBOFAN ENGINES
Exhaust Emission Characteristics and Variability for Maintained General Electric CF6-50 Turbofan Engines.
AD-A092 291/4 1455

Flow-Closing Bleed Valve Assembly.
PAT-APPL-6-171 611 1455

TURBOGENERATORS
Design Study for a 100-Watt Turboalternator Power Unit.
AD-B029 195/5 1364

TURBOJET ENGINES
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
AD-A092 229/4 1454

YJ101-YF-17 Aircraft Prototype Development Summary.
AD-B022 460/0 1455

TURBOMACHINERY
Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454

TURBOPUMPS
Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455

TURBULENCE
Reprint: Some Physical Insights into Beam Propagation in Strong Turbulence.
AD-A092 004/1 1440

Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

TURBULENT FLOW
Reprint: Some Comments on the Energy Method.
AD-A091 944/9 1438

TURNING
Analytical Model for the Turning of Tracked Vehicles in Soft Soils.
AD-A092 277/3 1434

TWIN LAKES
Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant,
PB81-130049 1322

TYPHOON HAVENS
Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
AD-A092 373/0 1295

TYPHOONS
Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
AD-A092 373/0 1295

Statistical Adjustment of the Hatrack Typhoon Track Forecasting Model.
AD-A092 411/8 1295

U-GAS PROCESS
Industrial Fuel Gas Demonstration Plant Program. Procurement Schedule for Long-Lead Items (Deliverable No. 48).
DOE/ET/13046-T72 1330

ULTRALOW FREQUENCY
Underwater communication systems
Submarine Communication at ULF Frequencies. I. A Program of Investigation.
AD-910 973/7 1409

ULTRASONIC RADIATION
Contrast Resolution Tissue-Equivalent Ultrasound Test Object.
PAT-APPL-6-186 381 1324

Sound transmission
Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437

ULTRASONIC TESTS
Ultrasonic Materials Characterization.
PB81-124984 1396

Reprint: Ultrasonic Diffraction Technique for Characterization of Fatigue Cracks,
PB81-126112 1397

ULTRASONIC WERE TRANSDUCERS
Ultrasonic Transducers. July, 1974-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855363 1353

ULTRASONICS
Characterization of Superconductors by Surface Wave Techniques.
AD-A092 387/0 1450

ULTRAVIOLET RADIATION
Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385

UNDERGROUND
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380

UNDERGROUND EXPLOSIONS
Late Time Containment.
AD-A092 214/6 1421

Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

UNDERGROUND MINING
Marketing of Coal Mining Equipment. Evaluation of Present Techniques: Suggestions to Aid Commercialization. Final Report.
DOE/RA/20014-T1 1345

UNDERSEA SURVEILLANCE
Forecast of Remote Underwater Sensing Technology.
AD-A092 390/4 1407

UNDERWATER CAMERAS
Handbooks
Handbook of Underwater Imaging System Design.
AD-904 472/8 1409

UNDERWATER COMMUNICATION SYSTEMS
Handbooks
Handbook of Underwater Imaging System Design.
AD-904 472/8 1409

Submarines
Submarine Communication at ULF Frequencies. I. A Program of Investigation.
AD-910 973/7 1409

UNDERWATER FOUNDATIONS
Foundation Piles for Marine Platforms. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850232 1393

UNDERWATER LIFE SUPPORT SYSTEMS
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323

UNDERWATER SOUND
Congrats Temperature and Salinity to Sound Speed Conversion.
AD-B022 435/2 1436

UNDERWATER TRACKING
An Application of Kalman Filtering to Torpedo Tracking.
AD-A092 303/7 1407

UNDERWATER VEHICLES
Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855082 1393

UNEMPLOYMENT
The Overtime Pay Provisions of the Fair Labor Standards Act,
PB81-132243 1300

UNIFIED GAUGE MODELS
Sequential Internal Supersymmetry.
DOE/ER/03992-412 1444

Unification Through a Supergroup.
DOE/ER/03992-422 1444

UNITED STATES
The Detailed Input-Output Structure of the U.S. Economy: 1972. Volume II. Total Requirements for Commodities and Industries, 1972. Part I. Commodity-by-Commodity Total Requirements, 1972. Part II. Industry-by-Commodity Total Requirements, 1972.
PB81-120149 1300

Moving from Reaction to Anticipation in U.S. Import Policies.
PB81-125544 1300

UNIVERSITIES
University Curricula in the Marine Sciences and Related Fields. Academic Years 1969-70 and 1970-71.
AD-A092 026/4 1304

Schools of Public Health Trends in Graduate Education,
HRP-0902582/6 1306

UNIVERSITY LIBRARIES
Reference Materials in Criminal Justice: A Selective, Annotated Bibliography,
ED-183 166 1298

UNLEADED GASOLINE
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

UNMANNED SPACECRAFT
Cost Estimating Procedure for Unmanned Satellites.
AD-A092 458/9 1457

UPPER ATMOSPHERE
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292

Comparison of Electron Densities in the Middle Atmosphere Indicated by Rocket Borne Probing Techniques.
AD-A092 503/2 1294

UPSILON RESONANCES
Open and Hidden Charm Muoproduction.
LBL-11561 1446

URANIUM
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.

GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

CMB-8 Material Balance System.
LA-8194-M 1430

Prospects for the Recovery of Uranium from Seawater. Final Report.
MIT-EL-80-001 1371

Field Test of Hydraulic Borehole Mining Systems in Shallow Uranium Sands.
PB81-128969 1348

Prediction of Concentration Profiles for a NIMCIX Column Absorbing Uranium from Aqueous Solution.
PER-26 1430

URANIUM 235

Exp 235 U Fission Product gamma Spectra: A Comparison Between Experiment and Calculation.
CEGB-RD/B/N-4667 1442

URANIUM 235 TARGET

Evaluation of exp 235 U Neutron Cross Section and gamma Ray Production Data for ENDF/B-V.
BNL-NCS-51184 1442

Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
HEDL-SA-2227-FP 1444

Intermediate Structure in Unresolved Resonances of Fissile and Fertile Nuclides.
LA-UR-80-2675 1445

URANIUM 238 TARGET

New Results on the Spectroscopy and Dynamics of Fission.
DOE/ER/01388-452 1443

Intermediate Structure in Unresolved Resonances of Fissile and Fertile Nuclides.
LA-UR-80-2675 1445

URANIUM BASE ALLOYS

Uitrasonic Measurement of Elastic Moduli of 17-4 pH Stainless Steel and Uranium -2 Molybdenum from -40 exp 0 C to 800 exp 0 C.
SAND-80-1121 1372

URANIUM CARBIDES

Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

URANIUM COMPOUNDS

Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
AD-A092 333/4 1334

URANIUM DEPOSITS

Evaluation of Selected Geochemical Anomalies in Colorado and the Southeastern US. Final Report.
GJBX-114(80) 1346

Aerial Radiometric and Magnetic Survey, San Angelo National Topographic Map: Texas, West Texas Project. Final Report.
GJBX-168(80) 1346

Principles and Characteristics of Surface Radon and Helium Techniques Used in Uranium Exploration.
GJBX-177(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Memphis Quadrangle, Arkansas, Missouri, and Tennessee. Final Report.
GJBX-178(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Fort Smith Quadrangle, Oklahoma, and Arkansas. Final Report.
GJBX-200(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Nashville Quadrangle, Tennessee, and Kentucky. Final Report.
GJBX-202(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Tupelo Quadrangle, Mississippi, Alabama, and Tennessee. Final Report.
GJBX-203(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Russellville Quadrangle, Arkansas.
GJBX-204(80) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Projects, Colorado. Volume I. Final Report.
GJBX-212(80) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 1, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA1) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 2, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA2) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 3, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA3) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 4, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA4) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 5, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA5) 1347

URANIUM DIOXIDE

Study of the Kinetics of Oxygen Redistribution in UOsub(2+ X) and UCeO sub 2 Due to a Temperature Gradient.
CEA-R-5020 1336

Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

URANIUM FLUORIDES

Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

Extrapolation to the U-F System from the Mo-F System.
K/ET-594 1337

URANIUM HEXAFLUORIDE

Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391

URANIUM ORES

Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5482 1426

Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348

URANIUM TETRAFLUORIDE

Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

URBAN AREAS

Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

Factors Influencing Crime and Instability in Urban Housing Developments,
PB81-128670 1309

Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344

Monitoring in Urban Counties.
PB81-138976 1310

Seminar on Transition and Leadership for Newly-Elected Mayors. Final Report on Fall, 1977 Program.
PB81-138984 1307

Urban Housing with Discrete Structures,
PB81-139057 1311

URBAN TRANSPORTATION

Light Rail Application and Design,
PB81-124620 1384

Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389

Passenger Transport Innovation in Adelaide: Taxi-Cabs.
PB81-125460 1384

Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas).
PB81-130775 1394

UREA/ALKYLENE-BIS (METHYL-)

Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369

UREA/BIS (CHLOROETHYL)-NITROSO

Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325

UREAS

Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332

URETHANE

Preparation and Properties of an Internal Mold Release for Rigid Urethane Foam.
BDX-613-2510 1373

URINALYSIS KITS

Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324

URINE

Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324

US DOE

Energy Information Data Base: Serial Titles.
DOE/TIC-4579(Rev.11) 1362

Energy Information Data Base: Corporate Author Entries.
DOE/TIC-4585(Rev.2) 1362

USER NEEDS

Summary of Findings on Home Mortgage Disclosure Act (HMDA) Data Users.
PB81-139230 1299

USSR

The Iranian Revolution and Its Impact on the Future of Soviet-Iranian Relations: An Assessment.
AD-A092 281/5 1302

The Legacy of Ideology in Soviet Foreign Policy Toward the West.
AD-A092 283/1 1302

UTAH

Analysis of Baseline Data from Federally Leased Oil Shale Tracts in Colorado and Utah.
DOE/EV/70031-5 1383

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

VACUUM PUMPS

Vacuum Pumping Concepts for ETF.
GA-A-16071 1393

VALVES

Fuel Valve.
PAT-APPL-6-187 646 1455

VANADIUM

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

Material Selection for TFTR Limiters.
PPPL-1719 1418

VAPORS

Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433

VARIABLE PITCH PROPELLERS

Dynamic Hull and Propeller Interaction Factors for FF-1052 Predicted from Quasi-Steady Model Experiments.
AD-A091 890/4 1392

Analysis of Wake Survey Experimental Data for Model 5365 Representing the R/V ATHENA in the DTNSRDC Towing Tank.
AD-A092 246/8 1392

VARIABLE SWEEP WINGS

Pivots

Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

VARIATIONAL PRINCIPLES

Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293

VARIATIONS

Low Frequency Geomagnetic Fluctuations (.04 to 25 Hz) on Land and on the Floor of Monterey Bay.
AD-A092 399/5 1411

VARISTORS

Varistors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855090 1353

Varistors. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855108 1353

VEGETATION

Discrete Scattering Approach to Vegetation Modeling.
AD-A092 017/3 1452

Highway Operation and Plant Damage.
PB81-133159 1387

VEHICLE ANIMAL COLLISIONS

Wildlife Research Report. Part One.
PB81-124638 1384

VELOCIMETERS

Doppler Velocimeter for Laser Accelerated Targets.
NRL-MR-4319 1417

VERMICULITE

Exchange of Lyotropic Series Cations by Micaceous Vermiculite and Its Weathering Products Determined by Electron Microscopy and Radiochemical Analysis. Final Technical Report, June 1, 1965-October 31, 1978.
DOE/EV/01515-84 1426

VERMONT

Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300

VERTICAL TAKEOFF AIRCRAFT

Aerodynamic configurations

V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289

Aeroelasticity

V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer

Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438

V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
AD-908 244/7 1289

VESSEL TRAFFIC SYSTEMS
Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
AD-A092 158/5 1392

VIBRATION
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454

Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456

Response of a Point Excited Infinitely Long Cylindrical Shell Immersed in an Acoustic Medium.
AD-A091 947/2 1449

Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368

The Shock and Vibration Digest. Volume 12, Number 11,
AD-A092 384/7 1449

Vaegojaemnheters Inverkan pa Bilfoerares Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
PB81-129710 1328

VIBRATIONAL ENERGY TRANSFER
Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439

VIBRATIONAL SPECTRA
Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
AD-A092 119/7 1333

Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
AD-A092 336/7 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
AD-A092 337/5 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
AD-A092 338/3 1334

VIDEO RECORDING
Concepts for Utilization of Video Discs in Military Applications.
AD-A092 029/8 1398

VIDEO SIGNALS
Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.
AD-A092 146/0 1355

VIDEO TAPE RECORDING
Automated Reading of Videotape.
AD-A092 224/5 1355

VIDICONS
Experimental Study of Contrast Utilizing a Vidicon.
AD-A092 407/6 1351

Vidicon Modification Study.
AD-B015 892/3 1352

Infrared detectors
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411

Silicon
Silicon Target Return Beam Vidicon.
AD-923 171/3 1352

VIEWER PRINTERS
Engineering Evaluation of the AR-109(XW-1) Viewer-Printer, Projection, Photographic.
AD-884 320/3 1399

VINYL PLASTICS
Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373

VIRGIN ISLANDS
Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330

VIRGINIA
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

VIRUS DISEASES
Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

VIRUSES
Disinfection of Viruses in Water by Ozone.
AD-A092 252/6 1318

VISCOUS FLOW
Viscous Flow over Arbitrary Geometries at High Angle of Attack,
AD-A091 971/2 1438

VISIBILITY
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290

VISION
Predictive Models of Human Visual Processes in Aerosystems.
AD-A092 290/6 1308

VISUAL ACUITY
Predictive Models of Human Visual Processes in Aerosystems.
AD-A092 290/6 1308

VISUAL PERCEPTION
Reprint: Suprathreshold Processing of Complex Visual Stimuli: Evidence for Linearity in Contrast Perception.
AD-A092 008/2 1326

VITAMIN A
Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 594 1325

VOCODERS
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
AD-A092 113/0 1408

VOICE COMMUNICATIONS
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
AD-A092 113/0 1408

Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1408

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1408

Countermeasures
Voice Countermeasures Effectiveness Analysis.
AD-912 392/8 1410

Digital systems
Testing of 19.2 KB/S MODEM.
AD-894 759/0 1360

VOICE COUNTERMEASURES
Voice Countermeasures Effectiveness Analysis.
AD-912 392/8 1410

VOLCANOES
Abstracts of Ongoing NSF Research Related to the Eruption of Mt. St. Helens.
PB81-132045 1343

VOLCANOLOGY
Abstracts of Ongoing NSF Research Related to the Eruption of Mt. St. Helens.
PB81-132045 1343

VOLTERRA EQUATIONS
Reprint: Nonlinearly Perturbed Volterra Equations.
AD-A092 495/1 1377

VORTICES
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288

VUILLEUMIER CYCLES
Development of a Temperature Controller for a Vuilleumier (VM) Cycle Power Cylinder.
AD-B007 816/2 1378

WAKE
Analysis of Wake Survey Experimental Data for Model 5365 Representing the R/V ATHENA in the DTNSRDC Towing Tank.
AD-A092 246/8 1392

WALLS
Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394

WAPPINGERS FALLS
National Dam Safety Program. Wappingers Falls Dam (I.D. Number N.Y. 3, D.E.C. 613A), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 170/0 1381

WAR GAMES
An HP-67 Combat Model.
AD-A091 992/8 1402

WARNING SYSTEMS
Acoustic detectors
Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437

Continuous wave radar
Lightweight radar alarm system. Vol. 2.
AD-482 913/1 1413

Lightweight radar alarm system. Vol. 1.
AD-482 920/6 1413

Radar equipment
Perimeter Protection System.
AD-503 039/0 1413

WASHINGTON (STATE)
The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
PB81-138166 1387

WASTE DISPOSAL
Control, Decontamination and Disposal of Mercury.
AD-A092 453/0 1328

WASTE WATER
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

Speciation of Trace Organic Ligands and Inorganic and Organometallic Compounds in Oil Shale Process Waters.
LBL-11167 1454

WATER
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333

Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
DOE/ER/05031-2 1336

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

Improved Electrostatic Coalescense System with Independent AC and DC Hydrophilic Electrodes.
PAT-APPL-6-110 738 1337

WATER ALLOCATION (POLICY)
The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387

The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387

The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-138141 1387

The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
PB81-138158 1387

WATER ANALYSIS
Coastal Remote Sensing Investigations. Volume 1. Marine Environment.
AD-A092 025/6 1348

Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies,
NUREG/CR-1299 1337

Development of a Chemical Toxicity Assay for Pulp Mill Effluents.
PB81-126369 1339

WATER COOLED REACTORS
Spent Fuel Data for Waste Storage Programs.
HEDL-TME-79-20 1424

Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

WATER FLOW
Reprint: Ship Centerplane Source Distribution.
AD-A092 431/6 1392

WATER LEVELS
Basin Development and Water Allocation,
PB81-127276 1343

WATER MANAGEMENT (APPLIED)
Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344

A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
PB81-140683 1387

WATER POLLUTION
Transport and Transfer Rates in the Waters of the Continental Shelf. Annual Report.
COO-2185-13 1383

A Trophic Classification of Minnesota Lakes Based on Lake Sediments.
PB81-124141 1343

Reprint: Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
PB81-129470 1339

Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,

PB81-130676 1386

A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
PB81-140683 1387

Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
PB81-142192 1387

WATER POLLUTION ABATEMENT

Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344

WATER POLLUTION CONTROL

Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385

Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385

UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385

National Municipal Policy and Strategy for Construction Grants, NPDES Permits, and Enforcement Under the Clean Water Act.
PB81-130783 1386

Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387

WATER POLLUTION DETECTION

Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies,
NUREG/CR-1299 1337

WATER POLLUTION EFFECTS (ANIMALS)

Development of a Chemical Toxicity Assay for Pulp Mill Effluents.
PB81-126369 1339

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329

WATER QUALITY

The Influence of River Water Quality on Storage Reservoir Management.
PB81-128688 1344

WATER QUALITY DATA

Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
PB81-130676 1386

WATER QUALITY MANAGEMENT

Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344

WATER RESOURCES

Indiana Five-Year Water Resources Research and Development Plan. Fiscal Years 1982-1986.
PB81-121253 1383

Water Resources in North Carolina.
PB81-127318 1343

Water Resource Priorities for the Midwest.
PB81-129801 1386

Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
PB81-142192 1387

WATER RIGHTS

Basin Development and Water Allocation,
PB81-127276 1343

WATER SUPPLY

Basin Development and Water Allocation,
PB81-127276 1343

A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291

Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344

Water Availability for the City of Lamar, Colorado.
PB81-130965 1386

The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387

The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387

The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-138141 1387

The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
PB81-138158 1387

The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
PB81-138166 1387

A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
PB81-140683 1387

WATER TREATMENT

Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
PB81-127391 1385

WAVE EQUATIONS

Reprint: Guided Solitary Waves.
AD-A092 047/0 1341

Reprint: The Second Painleve Transcendent: A Nonlinear Airy Function.
AD-A092 052/0 1375

Area Law as a Consequence of the Loop Wave Equation.
DESY-79/82 1448

WAVEFORMS

High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361

WAVEGUIDE CIRCULATORS

Broadband

Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
AD-912 790/3 1360

Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
AD-912 791/1 1360

WAVEGUIDES

Thin films

Thin Film Optical Waveguide Technology.
AD-919 567/8 1352

WEAK INTERACTIONS

Low Energy Weak Interactions and Decays.
LBL-11510 1445

WEAK NEUTRAL CURRENTS

Parity Violation in Polarized Electron Scattering.
SLAC-PUB-2619 1447

WEAK PARTICLE DECAY

Low Energy Weak Interactions and Decays.
LBL-11510 1445

WEAPON DELIVERY

Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403

WEAPON SYSTEM EFFECTIVENESS

The SOTAS-Scout-AAH/HELLFIRE System.
AD-A092 147/8 1288

WEAPON SYSTEMS

Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
AD-A091 988/6 1431

Millimeter Wave Radar Applications to Weapons Systems.
AD-B012 103/8 1413

Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400

WEAPONS

New Principles in Weapons--Translation.
AD-A092 100/7 1402

WEAR

Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
AD-A092 289/8 1373

WEATHER FORECASTING

Statistical Adjustment of the Hatrack Typhoon Track Forecasting Model.
AD-A092 411/8 1295

WEATHERING

The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
AD-A091 887/0 1373

The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
AD-A092 105/6 1373

WELDED JOINTS

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851800 1398

Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
PB81-851818 1398

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-851826 1398

Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851834 1398

WELDMENTS

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851800 1398

Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
PB81-851818 1398

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-851826 1398

Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851834 1398

WELL CASINGS

Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction. Volume 1.
BNL-51224(V.1) 1344

WELL DRILLING

Contracts for Field Projects and Supporting Research on Enhanced Oil Recovery and Improved Drilling Technology.
DOE/BETC-80/3 1344

WELL LOGGING

High Temperature Electronics and Instrumentation Seminar Proceedings.
SAND-80-0834C 1348

WELL LOGGING EQUIPMENT

High Temperature Electronics and Instrumentation Seminar Proceedings.
SAND-80-0834C 1348

WEST VIRGINIA

Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

WET ROAD CONDITIONS

Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels.
PB81-126753 1389

WHALES

Reprint: Acoustics and the Behavior of Sperm Whales.
AD-A092 082/7 1340

WHISTLERS

Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855066 1294

Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294

WIGGLER MAGNETS

Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

WILDLIFE

Wildlife Research Report. Part One.
PB81-124636 1384

WIND

Seasonal Variability in the Intermediate Waters of the Eastern North Atlantic.
AD-A091 937/3 1341

Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
DOE/CS/20160-01(V.5) 1362

WIND POWER

Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
DOE/ET/20280-3 1365

Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362

WIND POWER PLANTS

MOD-2 Wind Turbine Farm Stability Study.
DOE/NASA/0134-1 1365

WIND SHEAR

Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295

Reprint: Long-Term Measurements in C2n in the Boundary Layer.
AD-A092 427/4 1295

Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295

WIND TUNNEL MODELS

Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396

WIND TUNNEL TESTS

P-3 Orion Fuel-Saving Modification Wind Tunnel Study.
AD-A091 906/8 1288

Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396

WIND TURBINES
Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
DOE/ET/20280-3 1365

Technology Assessment of Wind Energy Conversion Systems.
DOE/EV-0103 1365

100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
DOE/NASA/9235-75/3 1362

Wind Energy Systems. Quarterly Review, April 1, 1980-June 30, 1980.
SERI/PR-635-770 1366

WING BODY CONFIGURATIONS
Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

WING CARRYTHROUGH STRUCTURES
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

WINGS
Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
AD-A091 962/1 1288

Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288

Planar structures
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
AD-B007 943/4 1356

Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289

Structures
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

WISHART MATRICES
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376

WNDWBX SUBROUTINES
WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356

WOMEN
Illness Behavior in Mid-Life Women. Executive Summary.
PB81-125536 1309

WOOD
Wood Products Used in Military Construction in the United States - 1962 and 1978.
AD-A092 022/3 1374

Wood Products Used in Constructing Conservation and Development Projects by the Corps of Engineers in the United States - 1962 and 1978.
AD-A092 023/1 1374

WOOD FLOUR
Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367

WOOD PULP
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374

WOOL
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369

WORK MEASUREMENT
An Application of Case-Mix Adjusted Lengths of Stay in Naval Medical Treatment Facility's Output Measurement.
AD-A092 409/2 1319

WORKSHOPS
Interaction of Drugs in the Hyperbaric Environment, Bethesda, Maryland, 13-14 September 1979. The Undersea Medical Workshop (21st),
AD-A092 451/4 1328

WOUNDS AND INJURIES
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 1--Translation.
AD-A092 090/0 1318

Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 2--Translation.
AD-A092 091/8 1318

Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 3--Translation.
AD-A092 092/6 1318

Experience of Soviet Medicines in a Great Patriotic War, 1941-1945. Volume 16, Section 4--Translation.
AD-A092 093/4 1318

WWER TYPE REACTORS
HOTRAN-3 Program for Reactor Core Thermohydraulic Studies in the Three-Channel Approximation.
KFKI-1979-26 1428

WWMCCS (WORLD-WIDE MILITARY COMMAND AND CONTROL SYSTEM)
Generalized Monitoring Facility. Revision I. Installation Guide (W6.4.1).
AD-B031 430/2 1356

WYOMING
Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
DOE/CS/20160-01(V.5) 1362

X-4 DETONATOR LOADER
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432

X RAY DIFFRACTION
Carbon Dioxide Activation; Formation of trans-(Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

Computer Program for the Determination of X-Ray Reflections from a Randomly Oriented Polycrystalline Sample by Diffractometer.
NRCN(TN)-023 1437

X RAY FLASHES
Upgrading the AURORA Simulator.
AD-A092 501/6 1452

X RAYS
Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335

XENON
Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371

XENON 133
Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

XENON CHLORIDE LASERS
Investigation of Plasma Processes in Electronic Transition Lasers.
AD-A091 903/5 1439

XENON LASERS
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439

YAW CARD RANGES
Yaw Card Range Tests of a 30mm Target Projectile.
AD-B014 108/5 1432

YAWSONDES
Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433

Results from Trials of a New Yawsonde Design.
PB81-120222 1434

YEASTS
Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
PB81-126567 1324

YOUTHS
A Demographic Profile of Minimum Wage Workers, Working Paper Number 4,
PB81-123713 1307

YTTERBIUM
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

YTTRIUM
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

ZINC
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

ZINC COATINGS
Reprint: Thin Zinc Films on Aluminum,
PB81-126203 1368

ZINC HALIDE PROCESS
Materials for Conoco Zinc Chloride Hydrocracking Process.
CONF-801079-2 1453

ZINC TELLURIDES
Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

ZIRCALOY 4
Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

Zircaloy Cladding Embrittlement Due to Steam Oxidation in Stagnant Steam Condition.
JAERI-M-8081 1371

ZIRCONIUM
Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

ZIRCONIUM ALLOYS
Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

PERSONAL AUTHOR INDEX

NTIS®

This index is arranged by personal author's last name followed by either a first name or an initial. NASA and DoE reports do not spell out an author's first name, but use only initials. As many as five authors may be included for each citation; all are listed in this index.

SAMPLE ENTRY

KAUSEL, E.
Computation of Hankel Transforms Using the Fast-Fourier Transform Algorithm.
PB80-104045 33

Author name
Title
NTIS order number Page number

AAGAARD, KNUT
Reprint: Freshwater and Atlantic Water in the Kara Sea.
AD-A091 965/4 1348

AASE, D. T.
Preconceptual Design and Assessment of a Tokamak Hybrid Reactor.
PNL-2720 1418

ABBOTT, NORMAN J.
Exploratory Development of Coated Fabric for Fire Proximity Suits.
AD-B029 209/4 1369

ABDEL-GHAFFAR, A. M.
Full-Scale Experimental Investigation of a Modern Earth Dam,
PB81-123788 1384

ABDIVALIEV, A.
Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
JINR-R-1-12125 1445

ABDU, REDA M.
Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327

ABERNETHY, C. N.
Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
AD-A092 158/5 1392

ABRAHAM, R. G.
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390

ABSHIER, JAMES O.
AS-11/B Stereoplotter Experiments and Studies.
AD-900 380/9 1341

ADACHI, H.
New Passivation Methods of GaAs.
AD-A092 354/0 1450

ADAMS, B. B.
Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
AD-A092 078/5 1351

ADAMS, J. P.
Response of LOFT SPNDs to Reactor Coolant Density Variations During a LOCA Simulation.
CONF-801107-1 1427

ADAMS, J. W.
Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424

ADDY, A. L.
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454

ADLER, L.
Reprint: Ultrasonic Diffraction Technique for Characterization of Fatigue Cracks,
PB81-126112 1397

AGENT, KENNETH R.
Propagation of Traffic Noise.
PB81-123523 1389

AGOSTI, J. H.
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432

AGRELLO, D. A.
Non-Orthogonal Harmonic-Oscillator Basis for Three-Body Problems.
IFT-P-11/79 1444

AGUILERA-NAVARRO, V. C.
Non-Orthogonal Harmonic-Oscillator Basis for Three-Body Problems.
IFT-P-11/79 1444

AHEARN, D. G.
Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
PB81-126567 1324

AKERLIND, NILS JR.
Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
AD-A092 419/1 1334

AKIN, MICHAEL GRESHAM
Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
AD-A092 469/6 1396

ALBANO, E. D.
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
AD-B007 943/4 1356

Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289

ALBERTSEN, J. F.
Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

ALCORN, J. S.
Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
GA-A-16013 1416

ALDRICH, D. C.
Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327

ALERS, PERRY B.
Forecast of Remote Underwater Sensing Technology.
AD-A092 390/4 1407

ALEXANDER, H. R.
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
AD-908 244/7 1289

V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289

ALEXANDER, J. M.
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.

PERSONAL AUTHOR INDEX

CENBG-7932 1442

ALEXANDER, WILLIAM D. JR.
Testing of 19.2 KB/S MODEM.
AD-894 759/0 1360

ALFORD, JAMES L.
Some Applications of Hybrid Thick Film Technology.
AD-917 846/8 1360

ALLAIRE, P. E.
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454

ALLAM, A.
Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

ALLEN, JOHN E. JR.
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334

ALLEN, L. B.
Advanced Modulator II.
AD-922 519/4 1409

ALLEN, PHILIP W.
Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1,
AD-B951 736/8 1426

ALLEN, R. E.
Theory of Core Excitons.
DOE/ER/01198-1323 1450

ALLEN, RALPH G.
Reprint: Retinal Thermal Injury.
AD-A092 466/2 1326

ALLEN, ROBERTA
Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139206 1313

Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139255 1313

Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139438 1314

ALLEN, V. H.
Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429

ALLEN, W. O.
ICF ETF And Its Engineering Development Requirements.
UCRL-84275 1419

ALLIROT, D.
Preliminary Geochemical and Physical Testing of Materials for Plugging of Man-Made Accesses to a Repository in Basalt.
RHO-BWI-C-66 1425

ALONZO, ANGELO A.
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321

ALPERT, DANIEL J.
Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383

ALSMILLER, R. G. JR.
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

ALSPACH, DANIEL L.
Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376

ALTENBACH, T. J.
Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
UCRL-84153 1425

ALTSHULER, E. E.
Reprint: Frequency Dependence of Slant Path Rain Attenuations at 15 and 35 GHZ.
AD-A092 505/7 1413

ALVAREZ, DONALD T.
Bathymetric Data Reduction System.
AD-A091 942/3 1348

ALVING, CARL R.
Reprint: Immune Reactivities of Antibodies against Glycolipids.
AD-A092 002/5 1317

Reprint: Influence of Temperature on Complement-Dependent Immune Damage to Lipsomes.
AD-A092 087/6 1318

ALWINE, DOUGLAS O.
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409

AMANO, J.
Range Profiles of Low Energy (100 to 1500 EV) Implanted exp 3 He and exp 4 He in Tungsten. II. Analysis and Discussion. Materials Science Center Report No. 4108.
DOE/ER/03158-73 1336

AMENT, ROBERT J.
US Military Hand Guns. Examination of Literature for the Last Twenty Years.
AD-B029 722/6 1436

AMOS, A. K.
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289

V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438

ANDERSEN, D.
Noise Reduction of Chain Conveyors. Volume I.
PB81-130833 1348

ANDERSON, C. F.
Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B007 733/9 1438

ANDERSON, J. D.
Radioactive Liquid Waste Discharged to Ground in the 200 Areas During 1977.
RHO-CD-34-4Q 1425

ANDERSON, JAMES S.
Cost Impact Assessment of Cost Accounting Practice Changes.
AD-A092 434/0 1296

ANDERSON, M. J.
Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428

ANDERSON, MARLIN H.
Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338

ANDERSON, RONALD D.
WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356

ANDERSON, WILLIAM R.
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334

ANDREASSI, MICHAEL W.
Metropolitan Housing and the Income Tax,
PB81-139040 1311

ANDREO, ROBERT H.
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293

ANDREWS, MICHAEL
Reprint: A Digital Image System for Atmospheric Research.
AD-A092 489/4 1356

ANGELOV, N.
Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
JINR-R-1-12125 1445

ANGOFF, G.
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 288/0 1327

ANSON, FRED C.
Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373

ANTHONY, R. G.
Catalytic Conversion of Oxygenated Compounds to Low Molecular Weight Olefins. Progress Report for the Period March 1, 1980 to August 31, 1980.
DOE/PC/04717-5 1331

ANTONUCCI, J. M.
Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339

ANTTONEN, G. J.
Preliminary Geochemical and Physical Testing of Materials for Plugging of Man-Made Accesses to a Repository in Basalt.
RHO-BWI-C-66 1425

AOKI, KOICHI
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332

AOKI, Y.
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

ARCHIBALD, WILLIAM R.
Field Test of Hydraulic Borehole Mining Systems in Shallow Uranium Sands.
PB81-128969 1348

ARLEN, RICHARD D. JR.
Coherent Rear Projection Viewer Evaluation.
AD-884 645/3 1399

ARMI, LAURENCE
Reprint: Anomalous Water in the Deep Ocean Suggests Lateral Advection-Stirring.
AD-A092 000/9 1348

Reprint: Flow Structures of the Benthic Ocean.
AD-A092 325/0 1341

ARMINGTON, A. F.
Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

ARNBERG, PETER W.
Vaegojaemnheters Inverkan pa Bilfoerares Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
PB81-129710 1328

ARNOLD, C.
High Temperature Electronics and Instrumentation Seminar Proceedings.
SAND-80-0834C 1348

ARNOLD, FRED E.
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332

ARNOLD, R. C.
Rapporteur Talk for IAEA Fusion Meeting, Brussels.
LBL-11429 1417

ARRANCE, EDWIN STANLEY
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290

ARUMI-NOE, F.
Continuing Development of the DEROB System. Quarterly Report, July 1, 1980-September 30, 1980.
DOE/CS/30254-1 1357

ARWOOD, J. W.
SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
ORNL/CSD-53 1428

ASFOUR, S.
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

ASHARE, E.
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

ASHBY, H. ANTHONY
Testing Support for Evaluation of Inspection/Maintenance Issues (Test Group Nos. 6 and 8).
PB81-123499 1389

ASHDOWN, SANDE C.
An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367

ASHER, NORMAN J.
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400

ASTROEM, GERT
Vaegojaemnheters Inverkan pa Bilfoerares Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
PB81-129710 1328

ATEFI, B.
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427

ATEYA, B. G.
Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

ATTAR, R.
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407

ATTENBERGER, S. E.
Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.

ORNL/TM-7124(Dr) 1417

ATTWOOD, DENNIS A.
Reprint: Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance.
AD-A092 048/8 1308

ATWATER, D. M.
EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300

ATWELL, T.
CMB-8 Material Balance System.
LA-8194-M 1430

AUFDERHAAR, GRANT CLIFFORD
A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293

AYOUB, M. M.
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

AYSTO, J.
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420

AZEVEDO, I. S.
Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
CBPF-A0003/79 1292

Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292

Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292

BABA, H.
Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420

BABIJ, E.
Meteological and Air Quality Data, Quarterly Report. WIPP Site: Eddy County, New Mexico. Autumn Quarter, September 1977-November 1977.
SAND-80-7121 1425

BADESSA, MARIA E.
QUANTA - Users Manual.
AD-A092 379/7 1403

BAER, PAUL G.
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435

BAKER, A. A.
Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
AD-A091 962/1 1288

BAKER, JAMES
INTERAND Target Annotation System.
AD-B001 109/8 1435

BAKER, M. R.
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403

BAKER, WILFRED E.
Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436

BALALYKIN, N. I.
Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

BALAZANI, VINCENZO
On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334

BALJE, O. E.
Design Study for a 100-Watt Turboalternator Power Unit.
AD-B029 195/5 1364

BALL, G. L. III.
Crosslinked Crystalline Polymer and Methods for Cooling and Heating.
PATENT-4 182 398 1338

BALLARD, KENNETH
Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
PB81-139305 1301

BALLUFFI, R. W.
Mechanism for Diffusion Induced Grain Boundary Migration.
DOE/ER/05002-13 1370

BAMBERG, S. A.
Basin Development and Water Allocation,
PB81-127276 1343

BAMBERGER, C. E.
Thermochemical Generation of Hydrogen and Oxygen from Water.
PAT-APPL-6-119 738 1454

BANCROFT, WILLIAM H.
Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319

BANE, JOHN M.
The Gulf Stream Meanders Experiment. Hydrographic Data Report. R/V Endeavor Cruises, EN-040 (2-8 August 1979) EN-045 (16-23 November 1979),
AD-A092 144/5 1349

BANERJEE, KALI S.
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377

BANGERTER, C. D.
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

BANKS, H. T.
Approximation Techniques for Parameter Estimation in Hereditary Control Systems.
AD-A092 184/1 1376

BARANS, C. A.
Reprint: Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
PB81-120768 1317

BARBER, VICTOR C.
Expedient Surfacing and Drainage of Roads, Streets, and Parking and Storage Areas in Theater of Operations. Report 2. Tests Conducted Between August 1968 and July 1969,
AD-907 934/4 1382

BARD, ALLEN J.
The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339

On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

BAREFOOT, A. D.
Investigation of Factors Affecting Energy for Irrigation Pumping.
PB81-127557 1291

BARGER, V.
Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446

BARHEN, J.
Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

BARKER, R. J.
NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

BARLOW, D. N.
Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454

BARNES, J. M.
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

BARNHART, J. S.
Improvements to the COBRA-TF (EPRI) Computer Code for Steam Generator Analysis. Final Report.
EPRI-NP-1509 1427

BARON, MELVIN L.
Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
PB81-122533 1393

BARR, MICHAEL
Perimeter Protection System.
AD-503 039/0 1413

BARR, W. L.
Technology of Direct Conversion for Mirror Reactor End-Loss Plasma.
UCRL-84235 1419

BARREAU, G.
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

BARRETT, L. E.
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454

BARRON, REGINALD A.
Mathematical Analyses of Landside Seepage Berms.
AD-A092 014/0 1350

BARSOM, J. M.
Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370

BARTA, D. A.
Seismic Analysis of Piping with Nonlinear Supports.
HEDL-SA-1994-FP 1428

BARTH, J.
3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336

BARTHEL, J. R.
Late Time Containment.
AD-A092 214/6 1421

BARTO, JON L.
Study of Gas Dynamic Effects in Non-Uniform High Pressure Electrical Discharges.
AD-A092 413/4 1437

BARTOLO, B. DI
Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433

BARTZ, J. A.
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379

BASKIN, CRAIG P.
Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331

BASSHAM, CECIL N.
Program Planning and Appraisal Methodology.
AD-B027 872/1 1297

BASSILY, S.
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

BASU, SANTIMAY
Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
AD-A092 084/3 1293

BASU, SUNANDA
Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
AD-A092 084/3 1293

BATDORF, S. B.
Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449

BATEMAN, MARK R.
Reprint: An Approach to Programmable CTD Filters Using Coefficients 0, + 1, and -1.
AD-A091 877/1 1358

BATES, S. C.
ISX-B Neutral Beams and the Beam Target Experiment.
ORNL/TM-7452 1418

BATTE, MARY BRUCE
Multifamily Property Utilization Task Force.
PB81-139131 1312

BATTEH, JAD H.
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

BAUGHMAN, GEORGE L.
Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324

BAUMGAERTNER, F.
Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

BAUMGARDNER, B.
Proceedings of the Workshop/Symposium on the Preliminary Evaluation of the Ionospheric Disturbances Associated with the HEAO-C Launch, with Applications to the SPS Environmental Assessment.
CONF-7911108- 1294

BAXMAN, C. I.
Applied Nuclear Data Research and Development. Progress Report, April 1-June 30, 1980.
LA-8524-PR 1445

BAXMAN, H.
CMB-8 Material Balance System.
LA-8194-M 1430

BAYHA, W. T.
Reprint: A Double-Ended, Unstable Resonator Submillimeter Laser.
AD-A092 044/7 1439

BAYLOR, V. B.
Materials for Conoco Zinc Chloride Hydrocracking Process.

PERSONAL AUTHOR INDEX

CONF-801079-2 1453

BEACH, WILLIAM F.
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
PB81-132987 1324

BEAKLEY, J. E.
An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456

BEAN, R. M.
Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies.
NUREG/CR-1299 1337

BEAVER, THOMAS FOSTER
Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
AD-A092 318/5 1413

BEHRMAN, JERE R.
The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
PB81-126732 1307

BEIDEMAN, LARRY R.
Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308

BEISEL, W. R.
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

BEISEL, WILLIAM R.
Reprint: Endogenous Pyrogen Physiology.
AD-A091 896/1 1317

BELENKY, GREGORY LUCAS
Reprint: Opiate-Like Effects of Electroconvulsive Shock in Rats: A Differential Effect of Naloxone on Nociceptive Measures.
AD-A092 341/7 1325

BELL, S. L.
Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
PB81-126567 1324

BELTRAO, M. DAC. DEM. C.
Note on the Differential Thermal Analysis of Amazonian Archeological Pottery.
CBPF-A0009/79 1302

BENCH, P.
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

BENE, R. W.
Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

BENEDICT, CHARLES E.
GFU-6/E 30mm Ammunition Loader for GAU-8A Gun System.
AD-B010 100/6 1432

BENENSON, MICHAEL W.
Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319

BENFOUGHAL, T.
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

BENNER, MICHAEL D.
Evaluation of a New Thermoplastic Gutta Percha Obturation Technique Using 45Ca.
AD-A092 391/2 1319

BENNETT, D.
Genetic and Developmental Study of a Complex Locus in the House Mouse. Progress Report, 1979-1980.
COO-4159-6 1316

BENNETT, E. R.
Treatment of Primary Effluent by Rapid Infiltration.
PB81-129124 1386

BENSON, ARTHUR L.
Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383

BENSON, B. B.
Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
DOE/ER/05031-2 1336

BERENDT, RICHARD F.
Reprint: Survival of Legionella pneumophila in Aerosols: Effect of Relative Humidity.
AD-A091 897/9 1317

BERENS, PETER H.
Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333

BERGBREITER, D. E.
Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 162/7 1333

BERGER, HAROLD
Ultrasonic Materials Characterization.
PB81-124984 1396

BERGLUND, DENNIS E.
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360

BERMAN, MARSHALL
Light Water Reactor Safety Research Program. Volume 14.
NUREG/CR-1469-V-14 1428

BERNHARDT, SUSANNE J.
Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
AD-A091 988/6 1431

BERNIER, W. E.
Evaluation of a New Thermoplastic Gutta Percha Obturation Technique Using 45Ca.
AD-A092 391/2 1319

BERNSTEIN, D. M.
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319

BERNSTEIN, E. R.
Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
AD-A092 333/4 1334

Reprint: On the Jahn-Teller Effect in ReF6.
AD-A092 334/2 1334

Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
AD-A092 119/7 1333

Reprint: Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State.
AD-A092 335/9 1334

Reprint: Raman Spectra of SiF4 and GeF4 Crystals.
AD-A092 332/6 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
AD-A092 336/7 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
AD-A092 337/5 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
AD-A092 338/3 1334

BERNSTEIN, LAWRENCE S.
Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293

BERNSTEN, ELIZABETH
Services in Support of Housing Search: How Necessary and Effective in the Experimental Housing Allowance Program.
PB81-138992 1310

BERRY, MARVIN
The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387

BERRY, MARVIN P.
The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387

BERT, CHARLES W.
Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368

Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368

BERTA, V. T.
Response of LOFT SPNDs to Reactor Coolant Density Variations During a LOCA Simulation.
CONF-801107-1 1427

BESSEY, ROGER L.
Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436

BEST, F. R.
Prospects for the Recovery of Uranium from Seawater. Final Report.
MIT-EL-80-001 1371

BETHEA, N. J.
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

BETHKE, G. W.
Design Study for Ground-Based Atmospheric Lidar System.
AD-A091 955/5 1292

BEUTLER, FREDERICK J.
Final Technical Report, 15 September 1975-14 July 1980.
AD-A091 989/4 1378

BEYER, RONALD E.
A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291

BEYRICH, W.
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
KFK-2860 1429

As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429

BHAT, M. R.
Evaluation of exp 235 U Neutron Cross Section and gamma Ray Production Data for ENDF/B-V.
BNL-NCS-51184 1442

BIARD, JAMES R.
Optical Couplers.
AD-B009 489/6 1440

BIGELOW, J. E.
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(Dr) 1420

BILHARTZ, E. J.
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

BILLHEIMER, JOHN W.
Food System Support of the Relocation Strategy in California. Volume I. Analysis.
AD-A092 056/1 1400

Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
AD-A092 164/3 1400

BILLMAN, K.
ICF ETF And Its Engineering Development Requirements.
UCRL-84275 1419

BIRK, JOHN
Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
PB81-132557 1317

BIRX, DANIEL L.
Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361

BISCAYE, P. E.
Transport and Transfer Rates in the Waters of the Continental Shelf. Annual Report.
COO-2185-13 1383

BISHOP, ALBERT B. III
Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

BISHOP, SHARON
Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324

BISSELL, R. C.
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

BLACK, WALTER L.
Development of a Lightweight 25mm Explosive Projectile.
AD-B026 541/3 1433

Development of a Thin-Wall 20mm Explosive Projectile.
AD-B007 705/7 1432

BLAHA, J. J.
Reprint: Some Experimental Problems in the Raman Analysis of Microsamples.
PB81-126136 1338

BLANC, C.
Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
LYCEN-7868 1373

BLANDENET, G.
Completion of a Prototype Installation for in-Line Coating by the Pyrosol Process for the Realization of Selective Glazings. Final Report.
EUR-6806-FR 1362

BLANDFORD, ROBERT R.
Spectral Ratios for Explosions in Salt.
AD-A091 911/8 1349

BLANKENSHIP, PETER E.
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.

AD-A092 113/0 1408

BLANTON, GERALD BERTRAM
Dynamic Linking in a Microcomputer Environment.
AD-A092 404/3 1356

BLEHM, D. A.
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

BLELLOCH, JACK W.
Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
AD-A092 373/0 1295

BLINK, J. A.
ICF ETF And Its Engineering Development Requirements.
UCRL-84275 1419

Parametric Analysis of Stress in the ICF HYLIFE Converter Structure.
UCRL-84272 1419

Properties of Lead-Lithium Solutions.
UCRL-84273 1419

BLOCK, FRANK
Survey of Decontamination Methods related to Field Decontamination of Vehicles and Materiel (Abridged).
AD-B031 659/6 1399

BLOND, R. M.
Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327

BLOOMER, JAMES WAYNE II.
Ball Obturation of a Spin Stabilized Tubular Projectile.
AD-A092 410/0 1432

BLOWERS, JAMES V.
Generating Weather Data for Linear Weapons Allocation Models.
AD-B021 970/9 1377

BLUE, S. C.
License Application for Type 48HX Cylinder for Shipment of Natural Assay UF sub 6.
KY-697 1422

BLUM, ROBERT W.
Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408

Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408

BLYE, RICHARD P.
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
PAT-APPL-6-172 086 1325

BOBBIE, R. J.
Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316

BODE, JOHN R.
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401

BODNER, S.
Laser Fusion Studies at NRL.
NRL-MR-4350 1417

BOGATY, J. M.
Rapporteur Talk for IAEA Fusion Meeting, Brussels.
LBL-11429 1417

BOGNER, C. E.
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389

BOHM, A.
New Experimental Evidence for a New Interpretation of Flavor SU(3).
DOE/ER/03992-402 1444

BOLLER, J. R.
NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

BOLLINI, C. G.
Gauge Field Copies.
PUC-tn-01/79 1446

BOLSENGA, S. J.
New Observations on the Daily Variations of Natural Ice Albedo.
PB81-132789 1350

BONATTI, E.
Reprint: Aragonite from Deep Sea Ultramafic Rocks.
AD-A091 967/0 1342

BONDARCHUK, EH. N.
Analysis of the System of Poloidal Fields in the "T-10M" Device.
NIIEFA-P-B-0430 1417

BONDER, SETH
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401

BONES, E. M.
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

BOOKHOUT, C. G.
Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329

BOOTHROYD, GERALD A.
'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411

BORAM, ROBERT J.
Vidicon Modification Study.
AD-B015 892/3 1352

BOREK, E.
Study of the Mechanism of Carcinogenesis by Carcinogens Which Are Negative in the Ames Test. Progress Report.
DOE/EV/10100-02 1328

BOREN, PATRICIA
Codebook for the Attitude Module of the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139198 1313

Codebook for the Attitude Module of the Household Survey, Site II, Wave 4. Housing Assistance Supoly Experiment,
PB81-139461 1315

Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139065 1311

Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139172 1312

Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139420 1314

Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139081 1311

Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139164 1312

Codebook for the Survey of Residential Buildings, Site I, Wave 3. Housing Assistance Supply Experiment.
PB81-139099 1311

Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139149 1312

Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139396 1314

Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139073 1311

Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139180 1312

Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139263 1313

Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139156 1312

Supplemental Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139404 1314

BORIS, JAY P.
Detailed Modelling of Combustion Systems.
AD-A092 234/4 1452

BORIS, PAUL N.
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
AD-B044 225/1 1289

BORRASS, K.
Maximum Attainable Power Density and Wall Load in Tokamaks Underlying Reactor Relevant Constraints.
IPP-4/182 1417

BORTELS, G.
As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

BOSTIAN, K. A.
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

BOTHAM, R. A.
Crosslinked Crystalline Polymer and Methods for Cooling and Heating.
PATENT-4 182 398 1338

BOTROS, B. A. M.
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318

BOULTON, WILLIAM
Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
AD-A092 370/6 1305

BOURQUIN, A. W.
Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

BOUWMAN, H. G.
Warmtebesparing door Isolatie en Stookwijze Bereikt in Twee Woningen-Woning II (Heat Savings by Insulation and Usage of the Heating System Achieved in Two Houses),
PB81-125197 1363

BOWEN, R. L.
Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339

BOWERS, W. D.
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 288/0 1327

BOWLS, NORMAN
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297

BOYARS, CARL
Taggants with Explosive Induced Magnetic Susceptibility.
PAT-APPL-6-181 924 1433

BOYCAN, GARY G.
Preliminary Outline of Driver Duties and Tasks for US/FRG MBT-70.
AD-A950 103/2 1434

Preliminary Outline of Gunner Duties and Tasks for US/FRG MBT-70.
AD-A950 106/5 1436

Preliminary Outline of Tank Commander Duties and Tasks for US/FRG MBT-70.
AD-A950 108/1 1434

US/FRG MBT-70 Crew Functional Procedures and Performance Standards.
AD-A950 109/9 1434

BOYNE, C. M.
Microwave Frequency Memory,
AD-A092 104/9 1354

BRABSON, B. B.
Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
DOE/ER/02009-139 1443

BRACKEN, JEROME
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401

BRADLEY, JOHN R.
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409

BRADLEY, R. G.
Performance Estimates for Personnel Access Control Systems.
SAND-80-0445 1421

BRAINARD, E. L.
Kilowatt Isotope Power System: Component Report for the Ground Demonstration System Accumulator.
DOE/ET/33001-T2 1431

Kilowatt Isotope Power System: Component Test Report for the Electric Heat Source Assembly. 77-KIPS-108.
DOE/ET/33001-T10 1430

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Accumulator. 77-KIPS-100.
DOE/ET/33001-T30 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Alternator Stator.
DOE/ET/33001-T3 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Jet Condenser Orifice Performance. 77-KIPS-103.
DOE/ET/33001-T33 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Pump. 77-KIPS-99.

DOE/ET/33001-T13 1430

Kilowatt Isotope Power System: Test Report for the Radiator Long and Short Panels. 77-KIPS-112.
DOE/ET/33001-T14 1431

BRAND, SAMSON

Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
AD-A092 373/0 1295

BRANDI, H. S.

Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

BRAUCH, M. L.

Solar Energy System Performance Evaluation, Design Construction, Bigfork, Montana, October 1979-April 1980.
SOLAR/1029-80/14 1380

BRAUN, SONJA

A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
ED-183 169 1298

BRAY, NANCY AMANDA

Seasonal Variability in the Intermediate Waters of the Eastern North Atlantic.
AD-A091 937/3 1341

BREAUX, O. P.

Variable Capacitance Electrostatic Energy Conversion System.
AD-B014 349/5 1363

BRECKENRIDGE, R. W. JR.

Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379

BREED, LINDA D.

An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
PB81-132334 1321

BREGER, D.

Reprint: Aragonite from Deep Sea Ultramafic Rocks.
AD-A091 967/0 1342

BRENDEN, JOHN J.

Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388

BRIGHT, D. S.

Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

BRIGHT, ROBERT W.

Assessment of Non-Invasive Methods of Measuring Bone Repair in Naval Casualty Victims.
AD-A092 145/2 1318

BRISBANE, T. E.

Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

BRISCOE, MELBOURNE G.

Reprint: Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.
AD-A092 327/6 1341

BROC, M.

Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

BROCK, HORACE W.

Game Theory, Decision Theory, and Social Choice Theory in the Context of a New Theory of Equity.
AD-A092 499/3 1378

BRODER, ALAN

Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354

BRODSKY, S. J.

Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446

Synthesis of Quantum Chromodynamics and Nuclear Physics.
SLAC-PUB-2595 1446

BROERMAN, J. G.

Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450

BROKMAN, A.

Group Representation of Bicrystal Invariant Translations with an Application to the Topology of Secondary Grain Boundary Dislocations.
DOE/ER/05002-14 1370

BROOKS, DAVID A.

The Gulf Stream Meanders Experiment. Hydrographic Data Report. R/V Endeavor Cruises, EN-040 (2-8 August 1979) EN-045 (16-23 November 1979),
AD-A092 144/5 1349

BROOKS, DOUGLAS M.

Environmental Influences in the Simulation of a Solar Space Heating System.
AD-A092 436/5 1378

BROOTHAERTS, J.

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

BROSSEAU, TIMOTHY L.

Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436

BROTT, WALTER H.

Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

BROWN, DAVID E.

Biotic Communities of the Southwest.
PB81-133134 1342

BROWN, E.

Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
AD-A091 997/7 1450

BROWN, K. C.

Comparative Ranking of 0.1-10 MW/sub E/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
SERI/TR-351-461 1366

BROWN, NANCY

The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387

BROWN, NANCY C.

The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
PB81-138166 1387

BROWN, ROBENA J.

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387

Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387

Fishways: Design and Operation. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801623 1317

Ice Fog. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801615 1350

BROWN, SCOTT

Reprint: Lack of Diagnostic Utility of Febrile Agglutinin Screens.
AD-A092 085/0 1318

BROWN, W. E.

A Mechanism for Incorporation of Carbonate into Apatite,
PB81-126104 1320

BRUCE, J. A.

Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

BRUCE, J. G.

Reprint: Eddies Off the Somali Coast During the Southwest Monsoon.
AD-A092 324/3 1341

BRUNEAU, B.

Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

BRYAN, PATRICK G.

Reprint: The Efficiency of Mollies, 'Poecilia mexicana', as Live Bait for Pole-and-Line Skipjack Fishing: Fishing Trials in the Tropical Central Pacific,
PB81-120693 1316

BRYANT, S. B.

Handbook of Underwater Imaging System Design.
AD-904 472/8 1409

BRYDEN, HARRY L.

Reprint: Geostrophic Vorticity Balance in Midocean.
AD-A092 080/1 1341

BUCHAU, J.

Reprint: Airborne Studies of Equatorial F Layer Ionospheric Irregularities.
AD-A092 006/6 1293

BUCHER, I. Y.

Abstract Model of the Finite Element Method.
LA-8468-T 1377

BUCK, RICHARD F.

Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
AD-A092 111/4 1359

BUCZEK, C. J.

Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

BUENDE, R.

Maximum Attainable Power Density and Wall Load in Tokamaks Underlying Reactor Relevant Constraints.
IPP-4/182 1417

BUETTNER, H.

Theory of Core Excitons.
DOE/ER/01198-1323 1450

BUFAICAL, R. F.

Calculation of the Hyperfine Constants of the V /sub K/ Center in CaF sub 2 , SrF sub 2 and BaF sub 2.
INIS-mf-5647 1451

BUIE, C.

Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381

BULLETT, M. J.

Geology of the Colado Geothermal Area, Pershing County, Nevada.
DOE/ID/12079-8 1343

BULLIS, R.

Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
UCRL-15292 1419

BULLOCK, D. C.

Magnetic Bubble Research.
AD-B002 919/9 1437

BUMAN, C. F.

Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357

BUNN, FRED L.

Tank Wars General Information Manual.
AD-A092 350/8 1434

BUNNEY, LELAND R.

Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

BUNTING, JAMES T.

Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

BURCH, D. F.

Production of Optically Thin Free-Standing Oil Films from the Edge of a Rotating Disc.
DOE/ER/01388-457 1441

BURCHSTED, C. A.

Index to the AEC/ERDA/DOE Air Cleaning Conferences.
CONF-801038-3 1426

BURGE, CAROL J.

Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403

BURGE, LEGAND L. JR.

Efficient Coding of the Prediction Residual.
AD-A092 198/1 1408

BURKE, DONALD S.

Reprint: Lack of Diagnostic Utility of Febrile Agglutinin Screens.
AD-A092 085/0 1318

BURKE, W. J.

Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 978/9 1292

BURNETT, LOUIS E.

Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

BURNS, CECIL D.

Expedient Surfacing and Drainage of Roads, Streets, and Parking and Storage Areas in Theater of Operations. Report 2. Tests Conducted Between August 1968 and July 1969,
AD-907 934/4 1382

BURNSIDE, W. D.

Airborne Antenna Pattern Code User's Manual.
AD-A092 316/9 1359

BURSTEN, M. S.

Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 162/7 1333

BUSH, C. E.

ISX-B Neutral Beams and the Beam Target Experiment.
ORNL/TM-7452 1418

BUSHELL, MICHAEL S.

The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.

AD-B040 233/9 1435

BUSSELL, NORMAN E.
A Comparison of the Inflammatory Response Produced by Commercial Eugenol and Purified Eugenol,
AD-A091 901/9 1325

BUTLER, SHANNON R.
Brotherhood-in-Arms East German Foreign Policy in Africa 'Kalashnikoffs, not Coca Cola Bring Self-Determination to Angola' Volksarme, 1978.
AD-A092 402/7 1302

BUTTERWORTH, P. J.
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288

BYBEE, J. E.
Off-Line Orthographic Printer.
AD-919 575/1 1399

BYER, R. L.
Reprint: Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source.
AD-A092 121/3 1294

CABLE, M. D.
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420

CACUCI, D. G.
Developments in Sensitivity Theory.
CONF-800942-10 1430

Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

CAGLE, CLIFFORD MONROE
An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
AD-A092 405/0 1399

CAHN, J. W.
Mechanism for Diffusion Induced Grain Boundary Migration.
DOE/ER/05002-13 1370

CAILLERET, J.
Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

CAITUCOLI, F.
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

CALISTO, G.
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

CALLAHAN, MICHAEL C.
Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319

CALLAN, JOHN G.
Reprint: Instrument for Determining Depth of Dehydration of Frozen Fish,
PB81-120727 1323

CAMPBELL, H. G.
Cost Estimating Procedure for Unmanned Satellites.
AD-A092 458/9 1457

CAMPBELL, JAMES B.
The SOTAS-Scout-AAH/HELLFIRE System.
AD-A092 147/8 1288

CAMPBELL, JOHN A.
Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396

CAMPBELL, KENNETH L.
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394

CAMPBELL, W. C.
Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295

CAMPBELL, WILLIAM CARROLL
Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295

CAMPOS, M. D.
Laser Modes as an Eigenfunction of an Operator Equation.
INIS-mf-5653 1440

CANADA, T.
CMB-8 Material Balance System.
LA-8194-M 1430

CANNON, MARK W.
Reprint: Suprathreshold Processing of Complex Visual Stimuli: Evidence for Linearity in Contrast Perception.
AD-A092 008/2 1326

CANNON, R. M.
Reprint: Plastic Deformation of Fine-Grained Alumina (Al2O3): II, Basal Slip and Nonaccommodated Grain-Boundary Sliding,
PB81-121543 1368

CANONICO, P. G.
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

CANTELLA, M. J.
Silicon Target Return Beam Vidicon.
AD-923 171/3 1352

CAREY, PENNY
Comparison of Gas Phase Hydrocarbon Emissions from Light-Duty Gasoline Vehicles and Light-Duty Vehicles Equipped with Diesel Engines.
PB81-122996 1389

CARLETON, W. E.
Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B007 733/9 1438

CARLIN, JAMES MICHAEL
The Effects of the Direction of Control Loading on a One-Dimensional Tracking Task.
AD-A092 459/7 1288

CARLO, J. T.
Magnetic Bubble Research.
AD-B002 919/9 1437

CARLSON, C. G.
A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291

CARLSON, R. R.
Treatment of Primary Effluent by Rapid Infiltration.
PB81-129124 1386

CARO, PAUL W.
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305

CARPENTER, EUGENIA S.
Estimation of Spatial Demand for Hospital Services.
PB81-135790 1322

CARPENTER, R. H.
Evaluation of Selected Geochemical Anomalies in Colorado and the Southeastern US. Final Report.
GJBX-114(80) 1346

CARRILLO, M. J.
Models and Techniques for Recoverable Item Stockage when Demand and the Repair Process are Nonstationary. Part I. Performance Measurement.
AD-A091 935/7 1401

CARROLL, W. P.
Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

CARSTEN, OLIVER
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394

CARTER, C. H. JR.
Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367

CARTER, WILBERT
High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
AD-886 531/3 1289

CARTWRIGHT, JOSEPH
Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
PB81-139305 1301

CARTWRIGHT, ROBERT H.
Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
PB81-130676 1386

CARVER, M. B.
MAKSIMA-CHEMIST: A Program for Mass Action Kinetics Simulation by Automatic Chemical Equation Manipulation and Integration Using Stiff Techniques.
AECL-6413 1335

CASAMAJOR, A. B.
Impact of Land Use on Solar Industrial Process Heat for the Food Processing Industry.
UCRL-85019 1388

CASE, F. N.
Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
CONF-801038-4 1423

CASPER, EVELYN
Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139206 1313

Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139438 1314

CASPER, EVELYN C.
Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139255 1313

CASTEN, R. F.
Unique Parity States in exp 109 Pd as a Test of Particle-Rotor and IBFA Models.
BNL-28305 1442

CASTLE, J. E.
Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

CASTORINA, THOMAS C.
Analytical Chemistry of 2,4,6-Trinitrotoluene.
AD-A092 348/2 1432

CATIZONE, P. A.
Meteological and Air Quality Data, Quarterly Report. WIPP Site: Eddy County, New Mexico. Autumn Quarter, September 1977-November 1977.
SAND-80-7121 1425

CAVANAGH, THOM R.
MILES Pressure/Seismic Response Engineering Development of MILES Test Fixture.
AD-A092 200/5 1400

CAVENY, LEONARD H.
Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.
AD-A092 344/1 1435

CAWLEY, W. E.
Submergible Barge Retrievable Storage and Permanent Disposal System for Radioactive Waste.
PAT-APPL-6-106 203 1424

CECCHI, J.
Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418

CEDERSUND, HANS-AKE
Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas).
PB81-130775 1394

CELMINS, AIVARS
Strong Blast Wave Computer Programs.
AD-A092 346/6 1435

CENTER, JULIAN L.
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412

CERVAY, RUSSELL R.
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
AD-A091 945/6 1369

CHABAY, I.
Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

CHACON, E.
Non-Orthogonal Harmonic-Oscillator Basis for Three-Body Problems.
IFT-P-11/79 1444

CHADWICK, R. B.
Reprint: Long-Term Measurements in C2n in the Boundary Layer.
AD-A092 427/4 1295

Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295

CHADWICK, RUSSELL B.
Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295

CHAMPETIER, R. J.
Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370

CHANCE, M. S.
Anomalous Transport Due to Shear-Alfven Waves.
PPPL-1709 1418

Second Region of Stability.
PPPL-1715 1448

CHANG, RONG-CHUN
Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
PB81-124158 1384

PERSONAL AUTHOR INDEX

CHANG, S. S.
Reprint: Migration Models for Polymer Additives,
PB81-126146 1323

CHAPIN, F. S. III.
Reprint: Response to Fertilization by Various Plant Growth Forms in an Alaskan Tundra: Nutrient Accumulation and Growth.
AD-A092 116/3 1316

CHAPLIN, K. R.
MAKSIMA-CHEMIST: A Program for Mass Action Kinetics Simulation by Automatic Chemical Equation Manipulation and Integration Using Stiff Techniques.
AECL-6413 1335

CHAPMAN, G. T.
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

CHAPMAN, RICHARD B.
Program Manual NSUP.
AD-A092 474/6 1393

Time-Domain Method for Computing Forces and Moments Acting on Three Dimensional Surface-Piercing Ship Hulls with Forward Speed.
AD-A092 475/3 1393

CHASE, DAVID
Integrated Coding and Waveform Design Study.
AD-A091 985/2 1410

CHASE, GARY A.
Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321

CHATTERJI, DULAL C.
Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325

CHATTO, D. R.
Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1367

CHAUVIN, G.
Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

CHEN, K. C.
Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

CHEN, W. F.
Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons,
PB81-120032 1350

Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
PB81-120065 1350

CHEN, W. Y.
Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
GA-A-16013 1416

CHERMETTE, H.
SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
LYCEN-7923 1451

CHEUNG, R. S.
Speech Algorithm Optimization at 16 KBPS.
AD-A092 010/8 1407

Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1408

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1408

CHIANG, ALICE M.
P+ N Gallium Phosphide Photodiodes.
PAT-APPL-6-185 471 1352

CHICKERUR, N. S.
A Mechanism for Incorporation of Carbonate into Apatite,
PB81-126104 1320

CHIKUSE, YASUKO
Distributions of Some Matrix Variates and Latent Roots in Multivariate Behrens-Fisher Discriminant Analysis.
AD-A091 960/5 1375

CHIN, J.
Selenide Isotope Power System Design Review Presentation, November 10-11, 1977.
DOE/ET/33004-T1 1431

CHIPMAN, RICHARD R.
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288

CHIRACHAVALA, THIPATAI
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394

CHIRIKOS, THOMAS N.
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321

CHISHOLM, MALCOLM H.
Facile Cleavage of the Mo= Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

CHO, FRED Y.
Low Loss Wideband Acoustic Delay Line.
AD-923 650/6 1352

CHO, Y.
Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(Rev.1) 1441

CHOPRA, ANIL K.
Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
PB81-124000 1384

CHOU, FENG-TE
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

CHOU, T. S.
Pumping Behavior of Sputter Ion Pumps.
BNL-28292 1441

CHOUINARD, R. J.
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

CHOW, L. C.
Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate CaHPO4.2H2O Formation,
PB81-126088 1320

CHRISTE, KARL O.
Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332

CHRISTIAN, D. J.
Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426

CHRISTOPHER, PATRICIA M.
Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1363

CHU, KWO R.
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

CHU, T.
Airborne Antenna Pattern Code User's Manual.
AD-A092 316/9 1359

CHU, T. L.
Thin Film Cadmium Telluride Solar Cells. Final Technical Report for Period July 1, 1979-August 31, 1980.
DOE/ET/23009-T10 1365

Thin Film Cadmium Telluride Solar Cells. Final Technical Report, July 1, 1979-August 31, 1980.
DOE/ET/23009-T11 1365

CHUBB, T. A.
Reprint: Analysis of Gas Dissociation Solar Thermal Power System.
AD-A091 982/9 1363

CHUM, H. L.
Review of Thermally Regenerative Electrochemical Systems. Volume I. Synopsis and Executive Summary.
SERI/TR-332-416(V.1) 1366

CHUNG, L. T. K.
Development of a Chemical Toxicity Assay for Pulp Mill Effluents.
PB81-126369 1339

CHUNG, S. U.
Search for Narrow Anti Pp States in the Reaction pi exp - p Implies p pi exp - Anti Pp at 16 GeV/C.
BNL-28353 1442

CHURCH, H. W.
Meteological and Air Quality Data, Quarterly Report. WIPP Site: Eddy County, New Mexico. Autumn Quarter, September 1977-November 1977.
SAND-80-7121 1425

CIANCIOLO, L. F.
Analysis of Barium Clouds. Volume I.
AD-907 560/7 1294

CIEGLER, ALEX
Solubilization of Lignocellulosic Materials.
PAT-APPL-6-180 546 1338

CLAESSON, JOHAN
Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395

CLARK, A. R.
Open and Hidden Charm Muoproduction.
LBL-11561 1446

CLARK, GEORGE B.
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380

CLARKE, R. ALLYN
Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341

CLARKE, W. CRAIG
Reprint: Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
PB81-120685 1340

CLAYTON, D.
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

CLEARY, MICHAEL J.
The Study of Production Leadtime Forecasting Models.
AD-A091 970/4 1390

CLEVERLY, DENNIS S.
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411

CLIFFORD, CARLETON M.
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316

CLINKENBEARD, J. D.
Hardware and Performance Evaluation: Tethered Float Breakwater Near-Shore Ocean Model.
AD-A092 059/5 1381

CLOUGH, RAY W.
Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395

COBB, JAMES M.
Reprint: Ketoconazole in Early and Late Murine Coccidioidomycosis.
AD-A091 921/7 1317

COCHRAN, G. F.
Basin Development and Water Allocation,
PB81-127276 1343

COCHRUN, B. L.
Signal Processing Circuit Development.
AD-A092 371/4 1411

COFFMAN, GEORGE W.
Structure and Adjustments of the Farming Sector: A Data Base by Regions.
PB81-137705 1291

COFFMAN, MARK R.
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325

COGGINS, J. L.
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379

COHEN, JANET
Comparison of Gas Phase Hydrocarbon Emissions from Light-Duty Gasoline Vehicles and Light-Duty Vehicles Equipped with Diesel Engines.
PB81-122996 1389

COHEN, JEFFREY S.
Congrats Temperature and Salinity to Sound Speed Conversion.
AD-B022 435/2 1436

COHEN, S.
Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418

COLE, HUGH M.
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401

COLE, R. J.
Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348

COLE, RAYMOND JR.
Performance of ANDVT HF Modem with Peak Clipping.
AD-A092 114/8 1408

COLLINS, J. L.
Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.

CONF-800607-87(Dr) 1423

COLLINS, L.
An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367

COLLYER, STANLEY C.
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287

COLOMBANT, D. G.
Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414

COMPTON, W. R.
Application of Statistical Fracture Criteria to the Problem of Predicting Infrared Dome Thermal Shock Failures.
AD-B028 668/2 1411

CONGDON, KENNETH P.
Voice Countermeasures Effectiveness Analysis.
AD-912 392/8 1410

CONKLIN, KEITH J.
Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
AD-885 837/5 1399

CONNOR, L. P.
Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370

CONRAD, D. G.
Reprint: Reduction of Heroin Intake in Baboons by an Economic Constraint.
AD-A092 342/5 1325

CONSTANTINE, G. M.
Construction of PBIB Designs with Triangular and L2 Schemes.
AD-A092 190/8 1376

CONSTANTINE, GREGORY M.
On Schur Optimality.
AD-A092 185/8 1376

CONTINENTINO, M. A.
Magnetic Excitations in Amorphous Ferromagnets.
INIS-mf-5654 1451

COOK, ANNABEL
The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-138141 1387

COOK, K. V.
Reprint: Ultrasonic Diffraction Technique for Characterization of Fatigue Cracks,
PB81-126112 1397

COOK, ROSA LEE
Reprint: Nursing Introspection: Peer Review.
AD-A092 467/0 1319

COOPER, A. W.
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

COOPER, W. T.
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403

COOPERSTEIN, G.
NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

CORBETT, B. L.
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(Dr) 1420

CORBETT, J. W.
Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

CORELLI, J.
Ceramic Materials for Fusion Reactors. Interim Report.
EPRI-AP-1499 1367

CORIOU, H.
Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

COSTLOW, J. D. JR.
Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329

COUCH, JOHN A.
Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

COURTNEY, R. W.
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432

COWAN, C. E.
Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348

COX, CAROLE
Illness Behavior in Mid-Life Women. Executive Summary.
PB81-125536 1309

COX, E. F.
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

COX, JOHN
Documentation--A Computerized Instructional Resource Management System. The Illinois Series on Educational Application of Computers. No. 26e,
ED-183 200 1306

Documentation--INFO: A Small Computer Data Base Management System for School Applications. The Illinois Series on Educational Application of Computers, No. 24e,
ED-183 199 1299

COX, LYNDON S.
Design of Fluidic Devices for Small Arms Stabilization,
AD-A092 027/2 1435

COY, RALPH G.
Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388

CRAFT, E. PAUL
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375

CRAIG, M. J.
Full-Scale Experimental Investigation of a Modern Earth Dam,
PB81-123788 1384

CRAMER, J. G.
Production of Optically Thin Free-Standing Oil Films from the Edge of a Rotating Disc.
DOE/ER/01388-457 1441

CRAMER, P. B.
Production of Optically Thin Free-Standing Oil Films from the Edge of a Rotating Disc.
DOE/ER/01388-457 1441

CRAMER, S. N.
Analysis of the New GCFR Upper and Lower Plenum Flow-Through Shields.
CONF-800942-4 1422

CRANDALL, D. H.
Oak Ridge National Lab., Tennessee.
DOE/TIC-11285 1337

CREEL, L. R.
Verification of Timing Routines.
LA-UR-80-3099 1357

CRESAP, D. A.
Storage and Retrievability of Existing and Future ICPP Calcines.
ENICO-1060 1424

CRITTENDEN, E. C. JR.
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

CRITTENDEN, R. R.
Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
DOE/ER/02009-139 1443

CROCKER, GLENN R.
Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

CROOK, L. BRUCE
Analysis of Wake Survey Experimental Data for Model 5365 Representing the R/V ATHENA in the DTNSRDC Towing Tank.
AD-A092 246/8 1392

CROSLEY, DAVID R.
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334

CROSS, LESLIE E.
Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353

CROW, S. A.
Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
PB81-126567 1324

CROWTHER, D.
Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315

CRUICKSHANK, JAMES
Reprint: Frequency-Stabilized Hybrid CO Laser.
AD-A092 053/8 1439

CRUMP, KENNY S.
Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329

CSAKVARY, T.
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390

CUNNIFF, KEVIN
Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
AD-A091 952/2 1359

CUNNINGHAM, DIANE
Data Bases Available at the National Bureau of Standards Library,
PB81-132870 1299

CUPPETT, DONALD G.
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375

CURCIO, J. A.
Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

CUTCHINS, MALCOLM A.
Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

CUTHRELL, W. F.
Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339

CYMERMAN, A.
Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327

CZAPARY, L. S.
Tables of Homogeneous Equilibrium Critical Flow Parameters for Water in SI Units.
EGG-2056 1427

CZAPOWSKYJ, MIROSLAW M.
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291

CZARNECKI, R. F.
Principles and Characteristics of Surface Radon and Helium Techniques Used in Uranium Exploration.
GJBX-177(80) 1346

D'APPOLITO, JOSEPH A.
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412

D'ASARO, ERIC
Reprint: Flow Structures of the Benthic Ocean.
AD-A092 325/0 1341

DABKOWSKI, D. S.
Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370

DAENNER, W.
MHD Pressure Losses in Pipeline Systems for Toroidal Fusion Reactors.
IPP-4/180 1417

DAHLKE, H. J.
Seismic Transient Analysis of a Containment Vessel with Penetrations.
HEDL-SA-1955 1428

DAIGLE, DONALD J.
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332

DANBERG, LEAH
The Improved JCVS.
AD-923 431/1 1356

DANDEKAR, B. S.
The Equatorial Latitude of Auroral Activity during 1972-1977,
PB81-132912 1294

DANIEL, JOHNNIE
Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
AD-A092 275/7 1304

DANIELS, WILLIAM L.
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets,
AD-A092 359/9 1324

DANON, J.
Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.

PERSONAL AUTHOR INDEX

CBPF-A0003/79 1292

Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292

Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292

Note on the Differential Thermal Analysis of Amazonian Archeological Pottery.
CBPF-A0009/79 1302

DANTI, K. J.

Coso Monitoring Program.
AD-A092 417/5 1343

DARNELL, A.

Properties of Lead-Lithium Solutions.
UCRL-84273 1419

DASARATHY, BELUR V.

Target Recognition System Design: Computational Structures with Response Time Characteristics Dictated by the Operational Environment.
AD-B041 709/7 1413

DAUBEN, WILLIAM G.

Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331

DAUGHERTY, THOMAS L.

Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
AD-A091 909/2 1392

DAVIDSON, HAROLD F.

Department of Defense In-House RDT&E Activities.
AD-A092 321/9 1296

DAVIS, FLOYD J.

Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349

DAVIS, GEORGE T.

Survey of Decontamination Methods related to Field Decontamination of Vehicles and Materiel (Abridged).
AD-B031 659/6 1399

DAVIS, H.

In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295

DAVIS, J.

A Survey of Computer Simulations of Digital Avionics Systems.
AD-A091 943/1 1288

DAVIS, R. F.

Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367

DAVIS, RAYMOND E.

Carbon Dioxide Activation; Formation of trans- (Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

DAVIS, REED E. JR.

An HP-67 Combat Model.
AD-A091 992/8 1402

DAVIS, SYDNEY

Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455

DAVIS, W. M.

Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316

DAY, W. G.

Correlation of Model Experiments with Ship Powering Data for Three Tankers Represented by Models 9006, 9007, 9008, and 9009.
AD-A091 940/7 1392

DE ARAUJO, C. B.

Nonlinear Processes of Magnons in Insulating Ferromagnetic Materials.
INIS-mf-5641 1451

DE BIEVRE, P.

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

DE CARVALHO FILHO, C. A. A.

Three-Critical Phenomena in the He exp 3 -He exp 4 Mixture.
INIS-mf-5642 1452

DE FELICE, F.

Gravitational Torque in General Relativity.
PUC-tn-11/79 1449

DE OLIVEIRA, L. C. S.

Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
INIS-mf-5649 1444

DE OLIVEIRA, L. E. M. C.

Calculation of the Electronic Structure and Contact Hyperfine Parameters of Interstitial Hydrogen in Alkaline - Earth Fluorides.
INIS-mf-5646 1451

DEADWYLER, RICHARD

Two-Stage Servovalve Development Using a First-Stage Fluidic Amplifier.
AD-A092 011/6 1393

DEAN, C. S.

Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

DEAN, W. C.

Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

DEAN, W. P.

Acute Oral Toxicity Studies in Rats and Rabbits,
PB81-139339 1329

DEBALD, PAUL S.

SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374

DECKER, WILLIAM MORE IV

Measurement of Pumped Superluminal Electromagnetic Radiation.
AD-A092 306/0 1441

DEELEY, HAROLD JR.

Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297

DEL GROSSO, VINCENT A.

Forecast of Remote Underwater Sensing Technology.
AD-A092 390/4 1407

DELABARRE, D. M.

National Resource Center Operational Feasibility and Use Study, Volume 1,
PB81-125304 1299

National Resource Center Operational Feasibility and Use Study, Volume 2, Appendix D,
PB81-125312 1299

DELAGRANGE, H.

Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

DELUCIA, J.

Analytical Study of the External Field for Non-Circular Tokamak with Multipole Moment Expansion Approach.
PPPL-1718 1418

DEMETRIADWES, S. T.

A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

DEMILLO, RICHARD A.

Software Project Forecasting,
AD-A091 923/3 1353

DENHAM, CHARLES R.

Reprint: Oblique Anhysteretic Remanent Magnetization.
AD-A092 081/9 1349

DENNIS, J. RICHARD

Getting Started in School Computing: Preparing to Purchase. The Illinois Series on Educational Application of Computers, No. 14e,
ED-183 192 1306

Instructional Games and the Computer-Using Teacher. The Illinois Series on Educational Application of Computers, No. 9e,
ED-183 189 1306

The Question Episode--Building Block of Teaching with a Computer. The Illinois Series on Educational Application of Computers, No. 4e,
ED-183 184 1305

Tutorial Instruction on a Computer. The Illinois Series on Educational Application of Computers, No. 6e,
ED-183 186 1305

DEPOY, PHIL E.

1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

DER KIUREGHIAN, ARMEN

A Response Spectrum Method for Random Vibrations,
PB81-122301 1394

DESAI, V.

Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.
DOE/ET/10460-14 1370

DETEMPLE, T. A.

Near Infrared Gas Lasers.
AD-B036 761/5 1439

DEUTSCHER, S. B.

Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

DEVAN, J. H.

Materials for Conoco Zinc Chloride Hydrocracking Process.
CONF-801079-2 1453

DEVE, BERND

Radiation Evaluation of the AM2901A Microprocessor.
AD-A092 415/9 1356

DEVITO, M. F.

Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
AD-A092 078/5 1351

Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351

DEVIVO, R.

In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295

DEVLIN, THOMAS M.

Chemical and Biochemical Studies of PGBX.
AD-A092 460/5 1315

DEVOE, D. B.

Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
AD-A092 158/5 1392

DEVOTO, R. S.

Field-Reversed Mirror Pilot Reactor. Annual Report.
EPRI-AP-1544 1416

DICKERSON, M. H.

Preliminary Comparisons Between Measurements and Model Calculations for the TMI Venting of exp 85 Kr.
UCID-18783 1426

Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

DICKINSON, RICHARD P.

Viscous Flow over Arbitrary Geometries at High Angle of Attack,
AD-A091 971/2 1438

DILORETO, VINCENT DANIEL

An Experimental Study of Solid Propellant Deflagration Using High Speed Motion Pictures and Postfire Residue Analysis.
AD-A092 423/3 1456

DINGER, R. J.

Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411

DINGGUO, HUANG

Laser Light Fiber Communication--Translation.
AD-A092 096/7 1407

DIVAVIN, V. A.

Peculiarities of Radiation Heat Transfer of Structural Elements of High-Temperature Physical Installations.
NIIEFA-P-A-0424 1417

DIXMIER, J.

Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

DIXON, BRIAN G.

Chemiluminescence of Secondary Peroxyesters.
AD-A092 322/7 1334

DIXON, CHARLES J.

Thin Film Hybrid Pulse Width Discriminator Circuit Fabrication.
AD-900 343/5 1360

DO CARMO L,

Color Centers in KCN: a Structural Analysis of Crystalline Domains.
INIS-mf-5644 1437

DOBBINS, EDWARD B. JR.

A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296

DOERFLINGER, O. C.

Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403

DOHERTY, NEVILLE J. G.

Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
PB81-122962 1320

DOHLMAN, G. F.

Reprint: Further Remarks on the Mechanism Producing the Symptoms of Meniere's Disease.
AD-A092 046/2 1317

DOINIKOV, N. I.

Analysis of the System of Poloidal Fields in the "T-10M" Device.

NIIEFA-P-B-0430 1417

DOMINIK, J. W.
Reprint: Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study.
AD-A091 922/5 1317

DONAHUE, BERNARD
Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381

DONDES, PHILIP A.
Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354

DONHAM, R. E.
100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
DOE/NASA/9235-75/3 1362

DONLAN, BRIAN J.
Diagnostic Software Development for a Real-Time Spectral Analysis System.
AD-A092 441/5 1356

DONNELLY, DENNIS M.
Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291

DONNELLY, JOHN R.
Carbohydrate Levels in Current-year Shoots of Sugar Maple.
PB81-134199 1291

DONOGHUE, J. F.
Difficult States in the Quark Model: Glueballs and the Pion. CTP No. 874.
CONF-800724-45 1443

DOREMUS, R. H.
Reprint: Modification of the Hillig-Charles Theory for Static Fatigue of Glass.
AD-A092 492/8 1367

DOREMUS, ROBERT H.
Reprint: Importance of Crack Tip Radii in Fracture and Fatigue of Glass.
AD-A092 493/6 1367

DORFMAN, L. M.
Pulse Radiolysis of Fast Reactions in Molecular Systems. Progress Report, November 1979-September 1980.
DOE/ER/01763-T1 1336

DORLAND, REBECCA B.
Reprint: Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine.
AD-A091 900/1 1317

DOSCH, R. G.
Assessment of Potential Radionuclide Transport in Site-Specific Geologic Formations.
SAND-79-2468 1425

DOSCHER, MARIAN O.
Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
PB81-139271 1301

DOUGHERTY, RALPH C.
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322

DOUGLAS G,
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T2 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T3 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T5 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T7 1345

DOUGLAS, G. W.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T1 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T4 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T6 1345

DOUHAN, LENNART
Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394

DOW, J. D.
Theory of Core Excitons.
DOE/ER/01198-1323 1450

DOWGUL, R. W.
MK 11 and MK 12 CO2 Scrubber Development.
AD-A092 314/4 1323

DOWLING, ANNE
Reference Materials in Criminal Justice: A Selective, Annotated Bibliography,
ED-183 166 1296

DOWLING, J. A.
Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

DREHMEL, DENNIS C.
Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383

DREW, R. T.
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319

DRISCOLL, EUGENE D.
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344

DRISCOLL, JOHN S.
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338

DRISCOLL, M. J.
Prospects for the Recovery of Uranium from Seawater. Final Report.
MIT-EL-80-001 1371

DROBOT, ADAM T.
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

DROTNING, JOHN E.
A Six State Study of Impasse Procedures in the Public Sector.
PB81-130718 1307

DRURY, JOHN S.
Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322

DU PLOOY, A. B. J.
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374

DUBBELDAY, PIETER S.
Effective Shear Modulus for Flexural and Extensional Waves in an Unloaded Thick Plate.
AD-A092 149/4 1449

DUBICKI, HENRYK
Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331

DUCROUX, R.
Study of the Kinetics of Oxygen Redistribution in UOsub(2+ X) and UCeO sub 2 Due to a Temperature Gradient.
CEA-R-5020 1336

DUDNEY, C. S.
Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.
CONF-8010108-2 1319

DUEK, E.
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

DUFF, R. E.
Late Time Containment.
AD-A092 214/6 1421

DUFFY, THOMAS E.
Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
PAT-APPL-6-195 188 1396

DUKE, C. B.
Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449

DUMA, RICHARD J.
Study of Pathogenic Free-Living Amebas in Fresh-Water Lakes in Virginia.
PB81-126450 1322

DUNCAN, C. S.
Silicon Web Process Development.
DOE/JPL/954654-80/12 1331

DUNN, MICHAEL G.
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
AD-A092 229/4 1454

DURKIN, JOHN M.
Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455

DURKIN, PATRICK R.
Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

DURKIN, RICHARD
Water Resource Priorities for the Midwest.
PB81-129801 1386

DUTTON, J. A.
Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362

DUTTON, J. C.
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454

DUTTON, R. W.
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351

DYBITSKIY, L. A.
Ways for Providing a High-Speed Analog-to-Digital Converter with Wide Dynamic Range--Translation.
AD-A092 099/1 1359

DYKSEN, WAYNE R.
A Population of Linear, Second Order, Elliptic Partial Differential Equations on Rectangular Domains. Part 1.
AD-A092 248/4 1376

DYKSTRA, CLIFFORD E.
Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

DZIERBA, A. R.
Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
DOE/ER/02009-139 1443

EARNSHAW, K. B.
Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295

EAST, R. J.
Software for Communication Between a Hewlett Packard 9825 Process Control Computer and a Honeywell 66/60 Time Sharing Computer.
GEPP-TIS-534 1357

EASTERLING, W. L.
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432

EDERY, D.
Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
EUR-CEA-FC-1013 1416

EDGAR, NEAL L.
The OCLC Serials Sub-System: A First Evaluation,
ED-183 161 1298

EDMONDS, P. H.
ISX-B Neutral Beams and the Beam Target Experiment.
ORNL/TM-7452 1418

EDSON , D. T.
Aircraft Avionics Tradeoff Study.
AD-917 204/0 1358

EDWARDS, E. M.
Coso Monitoring Program.
AD-A092 417/5 1343

EFTRING, BENGT
Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395

EHLERT, M. L.
Williams Air Force Base Air Quality Monitoring Study,
AD-A092 165/0 1381

EHRENBERG, RONALD G.
The Overtime Pay Provisions of the Fair Labor Standards Act,
PB81-132243 1300

EISENBRAUN, E. J.
Polynuclear Aromatic Compounds. Synthesis and Purification.
PB81-125015 1332

EISENHART, L. D.
Successive Collision Calculation of Resonance Absorption (AWBA Development Program).

WAPD-TM-1468 1430

EISNER, ELLEN J.
Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305

EKLUND, J. D.
Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347

EL-MASRY, N. A.
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

ELDRIDGE, O. C.
Currents Induced in Tokamaks by Electron Cyclotron Heating.
ORNL/TM-7503 1418

ELKINS, GARY EUGENE
Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384

ELKMAN, PAUL
Momentum Distribution of Ions in Plasma Beam.
AD-A092 385/4 1447

ELLARD, JAMES A.
Improved Synthesis of 2,4-Diamino-6-Hydroxymethylpteridine.
PAT-APPL-6-133 788 1332
Separation of Triphenylphosphine Oxide from Methotrexate Ester and Purification of Said Ester.
PAT-APPL-6-143 129 1338

ELLENDER, RUDOLPH D.
Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317

ELLINGSON, HERMAN E.
Long Range Listening System.
PATENT-4 223 311 1410

ELLIOTT, J. P.
GCFR Steam Generator Conceptual Design.
GA-A-15894 1428

ELLIS, B. S.
Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426

ELLIS, P. F. II.
Geothermal Materials Survey : Arkansas Power and Light Development and Demonstration Project. 100KW Power System Using Direct Contact Heat Exchangers, El Dorado, Arkansas.
DOE/ET/27026-T4 1330

ELLIS, S. D.
Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446

ELSMORE, TIMOTHY F.
Reprint: Reduction of Heroin Intake in Baboons by an Economic Constraint.
AD-A092 342/5 1325

ELSNER, N. B.
Selenide Isotope Power System Design Review Presentation, November 10-11, 1977.
DOE/ET/33004-T1 1431

EMEL, W. A.
Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

EMLEN, WARREN M.
Engineering Evaluation of the AR-109(XW-1) Viewer-Printer, Projection, Photographic.
AD-884 320/3 1399
Engineering Evaluation of the Vanguard M-731 Viewer.
AD-833 815/4 1399

EMMETT, M. B.
Analysis of the New GCFR Upper and Lower Plenum Flow-Through Shields.
CONF-800942-4 1422

ENCHEVICH, I. B.
Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

ENDEMANN, M.
Reprint: Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source.
AD-A092 121/3 1294

ENDERS, J. H.
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394

ENGHOLM, B. A.
Preliminary Radiation Criteria and Nuclear Analysis for ETF.
GA-A-16072 1416

ENGLISH, MILDRED
Navy Manager's Guide for the Design Sections of MIL-H-46855.
AD-A092 009/0 1302

ENRIQUEZ, C. R.
Note on the Differential Thermal Analysis of Amazonian Archeological Pottery.
CBPF-A0009/79 1302

ENSMINGER, JOHN T.
Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322

ENSSLIN, N.
CMB-8 Material Balance System.
LA-8194-M 1430

EPTON, MICHAEL A.
PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438

ERICKSON, J. L.
Field-Reversed Mirror Pilot Reactor. Annual Report.
EPRI-AP-1544 1416

ERICKSON, RONALD A.
Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403

ERICKSON, STANTON J.
Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329

ERIKSON, A. L.
Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

ERISMAN, L. R.
High Rate, Rechargeable, Silver-Zinc Pile Type Battery.
AD-B007 515/0 1366

EROS, STEVEN
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439

ESCHLE, JOHN
Adaptive Antenna Control (AAC) Program.
AD-A092 030/6 1407

ETKIN, A.
Search for Narrow Anti Pp States in the Reaction pi exp - p Implies p pi exp - Anti Pp at 16 GeV/C.
BNL-28353 1442

ETTEN, PAUL VAN
High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361

ETZ, E. S.
Reprint: Some Experimental Problems in the Raman Analysis of Microsamples.
PB81-126138 1338

EVANOWSKY, JOHN B.
Testing of 19.2 KB/S MODEM.
AD-894 759/0 1360

EVANS, W.
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303
Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304

EVERS, ROBERT C.
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332

EVERY, MARTIN G.
Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323

EWANIZKY, T. F.
Reprint: A Double-Ended, Unstable Resonator Submillimeter Laser.
AD-A092 044/7 1439

EWANS, JOHN R.
Reverse Velocity Rotor System for Rotorcraft.
PATENT-4 227 856 1289

FABER, L. H.
Mobile Ambient Air Monitor.
RFP-3010 1398

FADEN, ALAN I.
Reprint: Experimental Endotoxin Shock: The Pathophysiologic Function of Endorphins and Treatment with Opiate Antagonists.
AD-A091 919/1 1317
Reprint: Naloxone Alteration of Physiological Parameters in Spinally Transected Animals.
AD-A092 340/9 1325

FADER, W. J.
Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
DOE/ET/53087-2 1448

FAISS, R. O.
STARAN Image Processing.
AD-A091 928/2 1353

FAIST, MICHAEL B.
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333

FALLAVIER, M.
Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337
Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371

FAN, FU-REN F.
The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339
On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

FANG, C.
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376

FANNENSTEIL, ROBERT P.
Data Link, Helicopter Supported Radar.
AD-885 551/2 1413

FANTE, RONALD L.
Reprint: Some Physical Insights into Beam Propagation in Strong Turbulence.
AD-A092 004/1 1440

FARBER, MILTON
A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
AD-A092 148/6 1456

FARID, Z.
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

FARKAS, DANIEL F.
Apparatus for Removing Corn from Cob.
PAT-APPL-6-187 380 1323

FARR, J. L. JR.
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
AD-B007 943/4 1356
Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289

FARRELL, A. J.
An Improved Flight Data Transcriber.
AD-A091 981/1 1398

FARRELL, RICHARD A.
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293

FAUST, R. A.
Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
ORNL/EIS-156/V1 1424

FAY, W. M.
Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

FAZEKAS, P.
Manifestation of the Frustration Effect in S= 1/2 Quantum Spin Systems.
KFKI-1980-03 1451

FAZIO, ERNEST J.
CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
PB81-126039 1300

FAZIO, ERNEST J. JR.
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
PB81-125619 1303
CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.

PB81-126047 1300

FAZIO, S. D.
Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316

FEDERICO, G.
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

FEE, KENNETH E.
Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304

FEINBERG, LENORE
California's Salmon Resource - Its Biology, Use and Management.
PB81-134041 1340

FEINS, I. R.
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
DOE/ET/15383-18 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
DOE/ET/15383-22 1364

Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364

FEIT, DAVID
Response of a Point Excited Infinitely Long Cylindrical Shell Immersed in an Acoustic Medium.
AD-A091 947/2 1449

FELDMAN, D.
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443

FELDT, L. E.
Phytoplankton and Physical-Chemical Conditions in Selected Rivers and the Coastal Zone of Lake Michigan, 1972.
COO-2003-36 1322

FENTIMAN, ALLISON F. JR.
GC/MS Assays for Abused Drugs in Body Fluids,
PB81-133746 1326

FERENDECI, A.
Momentum Distribution of Ions in Plasma Beam.
AD-A092 385/4 1447

FERNANDEZ, S. J.
Continuous Plutonium Monitor for Nuclear Facility off-Gas Streams.
ENICO-1054 1396

FERNOW, R.
Search for Narrow Anti Pp States in the Reaction pi exp - p Implies p pi exp - Anti Pp at 16 GeV/C.
BNL-28353 1442

FERRARA, ELAINE A.
Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
AD-A092 285/6 1325

FETT, ROBERT W.
Navy Tactical Applications Guide. Volume I. Techniques and Applications of Image Analysis,
AD-B024 969/8 1400

FICO, CARY
Influence of Wave Refraction on Coastal Geomorphology-Bull Island to Isle of Palms, South Carolina.
AD-A091 913/4 1341

FIELD, ROBERT W.
One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
AD-A092 189/0 1333

FIELDS, D. E.
Interactive Code for Examining Hypothetical Distributions of Experimental Data.
CONF-8010106-2 1357

FILIPCZAK, ROBERT A.
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
AD-B044 225/1 1289

FILLO, J. A.
Proceedings of Brookhaven National Laboratory's Fusion/Synfuel Workshop.
BNL-51188 1414

FINEGOLD, J. G.
Comparative Ranking of 0.1-10 MW/sub E/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
SERI/TR-351-461 1366

FINIZIE, L.
Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978.
AD-A092 043/9 1454

FINK, J. H.
Field-Reversed Mirror Pilot Reactor. Annual Report.
EPRI-AP-1544 1416

FINKELMAN, M.
Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
UCRL-15292 1419

FINSTER, DAVID C.
Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331

FIORE, N. F.
Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.
DOE/ET/10460-14 1370

FISCHER, G. J.
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427

FISCHER, H. B.
The Influence of River Water Quality on Storage Reservoir Management.
PB81-128688 1344

FISH, R. H.
Speciation of Trace Organic Ligands and Inorganic and Organometallic Compounds in Oil Shale Process Waters.
LBL-11167 1454

FISHER, E. M. R.
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

FISHER, STEVEN C.
Documentation for an Improved Version of HULIMP, A Ship Hull Improvement Computer Program Based on the Baba Theory.
AD-A092 133/8 1392

Documentation for the Ship Hydrostatics Computer Program HYDRO.
AD-A092 454/8 1393

FITCH, E. C.
Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
AD-A092 289/8 1373

FITCH, ROBERT
Reprint: A Digital Image System for Atmospheric Research.
AD-A092 489/4 1356

FLAHERTY, R. J.
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352

FLAVELL, W.
Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F).
PB81-139388 1374

Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
PB81-139370 1374

FLEMING, WENDELL
Reprint: Stochastic Control Under Partial Observations.
AD-A092 187/4 1376

FLEMING, WENDELL H.
Nonlinear Semigroup for Controlled Partially Observed Diffusions.
AD-A092 188/2 1376

FLETCHER, G. V.
Reprint: Reduction of Heroin Intake in Baboons by an Economic Constraint.
AD-A092 342/5 1325

FLETCHER, R. A.
Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

FLINN, J. E.
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

FLINT, STEVEN
Failure Rates for Fiber Optic Assemblies.
AD-A092 315/1 1440

FLOOD, JAMES H.
Production of Insulated Footwear Using Liquid Injection Molding Equipment. 1. Method.
AD-A091 881/3 1400

FLOOD, ROGER D.
Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349

FLUMERFELT, R. W.
Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, December 1, 1979-February 29, 1980.
DOE/BC/10083-7 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1980-August 31, 1980.
DOE/BC/10083-9 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, March 1980-May 31, 1980.
DOE/BC/10083-8 1344

Basic Studies in the Recovery of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1979-August 31, 1979.
DOE/BC/10083-1 1344

FOLTING, KIRSTEN
Facile Cleavage of the Mo= Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

FOLTS, HAROLD C.
Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

FOLTZ, RICKY ALLEN
Thermal Analysis and Design of Air Cooled Electronic Circuit Boards Using a Desktop Computer.
AD-A092 309/4 1359

FOLTZ, RODGER L.
GC/MS Assays for Abused Drugs in Body Fluids,
PB81-133746 1326

FOLTZ, RUTH B.
GC/MS Assays for Abused Drugs in Body Fluids,
PB81-133746 1326

FONCK, R.
Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418

FONG, H. H.
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

FORBES, J. M.
Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456

FORDHAM, J. W.
Basin Development and Water Allocation,
PB81-127276 1343

FORE, C. S.
Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
ORNL/EIS-156/V1 1424

FORMAN, ROBERT
Bus Driver Training Simulator Assessment.
PB81-128977 1307

FORSBERG, V. M.
SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
ORNL/CSD-53 1428

FORT, T. JR.
Low Interfacial Tension and Miscibility Studies for Surfactant Tertiary Oil Recovery Processes. Annual Report, December 1, 1978-November 30, 1979.
DOE/BC/10007-8 1344

FOUNTAIN, LEWIS S.
Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437

FOX, DANIEL B.
A Composite Algorithm for Mixed Integer Constrained Nonlinear Optimization.
AD-A092 435/7 1378

FRANCIS, GEORGE W.
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360

FRANCK, KAREN A.
Factors Influencing Crime and Instability in Urban Housing Developments,

PB81-128670 1309

FRANCOIS, E.
Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371

FRANGOS, W.
Bipole-Dipole Survey at Roosevelt Hot Springs, Thermal Area, Beaver County, Utah.
DOE/ID/12079-15 1342

FRANK, ARLEN W.
Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332

Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332

FRANKLE, JEROME M.
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435

FRANKLIN, R. L.
Design Study for Ground-Based Atmospheric Lidar System.
AD-A091 955/5 1292

FRAPPIER, J. C.
Contribution to Research on the Elastic and Elasto-plastic Behavior of Porous Materials.
CEA-R-5006 1373

FRECCIA, WILLIAM F.
A Technique for Staining Extracted Teeth: A Research and Teaching Aid for Bleaching.
AD-A092 358/1 1319

FREDERICKS, RODNEY G.
Reprint: High-Precision Instrumentation System for Sea-Bed Pressure Measurements in Muddy Sediments.
AD-A091 974/6 1348

FREDERICKS, W.
Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

FREEDMAN, JEROME
Ad Hoc Sub-Group Interim Report on National Training Center,
AD-A092 019/9 1303

FREIBERG, R. J.
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

FREILING, EDWARD C.
Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

FREUND, L. B.
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449

FREY, JAMES
Evaluation of HEW - Assisted Programs to the Hispanic Population of Clark County, Nevada.
PB81-125726 1309

FREY, JOHN H.
Heat Exchangers for Space Heating. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851032 1380

Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
PB81-850943 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850968 1448

Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850950 1448

Nondestructive Testing of Fractures. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851784 1398

Nondestructive Testing of Fractures. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851792 1398

Nondestructive Testing of Joints. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850919 1397

Nondestructive Testing of Joints. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850927 1397

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-851826 1398

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851800 1398

Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851834 1398

Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
PB81-851818 1398

Ocean Wave Spectra. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851354 1342

Regional Seismicity. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850935 1350

Resource Conservation and Recovery Act (RCRA). January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851024 1363

Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851362 1348

Systems Analysis Applied to Energy Forecasting. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-850984 1363

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851016 1388

Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851008 1388

FREY, W. P.
Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

FRICK, JOHN G. JR.
Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369

FRICKE, H. D.
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379

FRIED, H. M.
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443

FRIEDAN, D. H.
Nonlinear Models in 2 + Epsilon Dimensions.
LBL-11517 1446

FRIEDMAN, MENDEL
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369

FRIES, R.
Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354

FRIESEN, H. N.
Basin Development and Water Allocation,
PB81-127276 1343

FRIGGENS, G. R.
Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

FRINGS, GARY
Exhaust Emission Characteristics and Variability for Maintained General Electric CF6-50 Turbofan Engines.
AD-A092 291/4 1455

FRISCH, SHELBY
HF (High Frequency) Radar Measurements of Circulation in the Eastern Strait of Juan de Fuca Near Protection Island (July, 1979).
PB81-127490 1342

FRISK, GEORGE V.
Reprint: A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom.
AD-A091 880/5 1436

Reprint: A Technique for the Evaluation of Circularly Symmetric Two-Dimensional Fourier Transforms and Its Application to the Measurement of Ocean Bottom Reflection Coefficients.
AD-A091 879/7 1436

FRITSCH, CONRAD F.
Exemptions to the Fair Labor Standards Act - Transportation Sector.
PB81-127441 1307

FRUCHTER, CHARLES L.
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409

FRUSH, C. L.
Evaluation of a Meteorological Airborne Pulse Doppler Radar.
AD-A092 276/5 1412

FU, C. Y.
GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
ORNL/TM-7341 1446

FU, K. S.
Reprint: Syntactic Models in Pattern Recognition and Applications.
AD-A092 468/8 1356

FU, SHIN-CHENG
Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

FUKUYAMA, FRANCIS
The Security of Pakistan: A Trip Report.
AD-A092 156/9 1302

FULCHER, J.
Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.
DOE/ET/10460-14 1370

FULLAM, H. T.
Air Oxidation and Seawater Corrosion of Hastelloy S and Hastelloy C-4.
PNL-3344 1372

FUNK, C. J.
Handbook of Underwater Imaging System Design.
AD-904 472/8 1409

FURTAW, R. N.
Aircraft Avionics Tradeoff Study.
AD-917 204/0 1358

FURUTA, T.
Zircaloy Cladding Embrittlement Due to Steam Oxidation in Stagnant Steam Condition.
JAERI-M-8081 1371

FUSFELD, HERBERT I.
Flow of Technology from the OECD to the U.S.S.R: A Feasibility Study,
AD-A092 442/3 1297

GABRIS, TIBOR
Development of a Two-Piece Mask and Lens and Mold for Same.
AD-A092 380/5 1326

GAEBEL, D.
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
AD-A092 155/1 1309

GAINES, PAULA A.
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433

GAJEWSKI, RALPH R.
Modal Analysis for Aircraft Response to Runway Surface Roughness.
AD-A092 057/9 1290

GALAITSIS, A.
Noise Reduction of Chain Conveyors. Volume I.
PB81-130833 1348

GALLELLI, JOSEPH F.
Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325

GALLERY, W. O.
Reprint: Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment.
AD-A092 005/8 1440

GALLET, M.
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

GALPERIN, A.
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427

GALVAO, R. M. O.
Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
IFUSP-P-180 1448

GAMBILL, W. R.
State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393

GANDHI, K.
Formulas for Calculating the Heating Value of Coal and Coal Char: Development, Tests, and Uses.

CONF-800814-25 1452

GANGULY, A. K.
Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351

GARDENHIRE, LARRY W.
Redundant Area Coding Study.
AD-888 625/1 1358

GARDNER, WILLIAM A.
Design and Implementation of Multi-Input Adaptive Signal Extractions.
AD-A092 265/8 1355

GARG, S. B.
ENDF/B Based 27-Group Cross-Sections for Some Rare-Earth and Concrete Elements.
INDC(IND)-25/GV 1422

GARRETT, H. B.
Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456

GARRETT, THELDA A.
Congrats Temperature and Salinity to Sound Speed Conversion.
AD-B022 435/2 1436

GASKIN, PETER
Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324

GASPARYAN, A. P.
Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
JINR-R-1-12125 1445

GATEWOOD, ROBERT
Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
AD-A092 370/6 1305

GAVIN, JAMES M.
Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

GAW, JAMES
Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
PB81-132052 1323

GEHRING, CHARLES
A Guide to Dutch Manuscripts Relating to New Netherland in United States Repositories,
ED-183 170 1298

GEIL, R. G.
Acute Oral Toxicity Studies in Rats and Rabbits,
PB81-139339 1329

GEMSKI, P.
Reprint: Isolation and Characterization of Minicell-Producing Mutants and Shigella spp.
AD-A091 918/3 1317

GEORGE, DAVID T.
Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

GERETY, ROBERT J.
Inactivation on Non-A, Non-B Hepatitis Agent.
PAT-APPL-6-150 320 1325

GERHARDS, C. C.
Effect of Cross Grain on Stress Waves in Lumber.
AD-A091 949/8 1374

GERHART, PAUL F.
A Six State Study of Impasse Procedures in the Public Sector.
PB81-130718 1307

GERKEN, F.
3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336

GERMAN, PEARL S.
Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321

GERRITY, J. L.
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403

GHAFORY-ASHTIANY, M.
Seismic Stability Evaluation of Earth Structures.
PB81-123069 1351

GIAMBIAGI, J. J.
Gauge Field Copies.
PUC-tn-01/79 1446

GIANNAULA, JOSEPH J.
Connector-to-Connector Adaptor.
PATENT-4 218 110 1352

GIBBONS, J. F.
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351

GIESE, PAMELA
Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
AD-A091 964/7 1374

GIESKE, J. H.
Elastic Moduli of Boron Carbide/Copper Composites from -40 exp 0 C to 800 exp 0 C by Ultrasonic Methods.
SAND-80-0881 1369

Ultrasonic Measurement of Elastic Moduli of 17-4 pH Stainless Steel and Uranium -2 Molybdenum from -40 exp 0 C to 800 exp 0 C.
SAND-80-1121 1372

GIESSEN, B. C.
Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372

GIGUERE, R. P.
Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370

GILCHRIST, RONALD CHARLES
Statistical Adjustment of the Hatrack Typhoon Track Forecasting Model.
AD-A092 411/8 1295

GILL, H. S.
Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388

GILLESPIE, E. H.
Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys,
PB81-121865 1372

GILMORE, J. M.
Buildup Studies of a Tandem Mirror Reactor with Inboard Thermal Barriers.
UCRL-84233 1419

GILROY, CURTIS
A Demographic Profile of Minimum Wage Workers, Working Paper Number 4,
PB81-123713 1307

GILSON, MICHAEL
Reprint: Migration Rate of Mud Bacteria as a Function of Magnetic Field Strength.
AD-A092 326/8 1340

GIMOTTY, PHYLLIS A.
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394

GINSBURG, ARTHUR P.
Reprint: Suprathreshold Processing of Complex Visual Stimuli: Evidence for Linearity in Contrast Perception.
AD-A092 008/2 1326

GINTHER, R. J.
Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

GINTHER, ROBERT J.
Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335

GIODA, ALBERTO S.
On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

GIORDANI, ANNE B.
Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
AD-A092 497/7 1335

GLANZ, J.
Mode Converter for Electron Cyclotron Resonance Heating of Toroidal Plasmas.
PPPL-1697 1418

GLASER, EDWARD M.
Quality of Worklife Programs: A Preliminary Technology Assessment.
PB81-125379 1309

GLASSER, IRVING
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297

GLASSMAN, ARTHUR J.
Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455

GLICKSMAN, ROBERT A.
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409

GLOVER, ED B.
Redundant Area Coding Study.
AD-888 625/1 1358

GLYNN, PETER W.
An Approach to Regenerative Simulation on a General State Space.
AD-A092 221/1 1376

GOEL, B.
Status of the Nuclear Data Library KEDAK-3. July 1979.
KFK-2386/I 1445

GOERKE, W. S.
Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
AD-B006 844/5 1350

GOLAN, S.
Reprint: Ultrasonic Diffraction Technique for Characterization of Fatigue Cracks,
PB81-126112 1397

GOLD, S. H.
Doppler Velocimeter for Laser Accelerated Targets.
NRL-MR-4319 1417

Preheat Studies on Laser Ablatively-Accelerated Foils.
NRL-MR-4356 1417

GOLDACKER, H.
Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

GOLDBERG, A. J.
Speech Algorithm Optimization at 16 KBPS.
AD-A092 010/8 1407

Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1408

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1408

GOLDMAN, CHARLES I.
Health Planning Related to Environmental Factors. Volume II: Foodborne and Waterborne Intestinal Illnesses Module,
HRP-0902233/6 1319

GOLDMAN, RALPH F.
Sex Differences in Acclimation to a Hot-Dry Environment,
AD-A092 360/7 1327

GOLDMAN, T. D.
Reprint: Units, Physical,
PB81-121824 1396

GOLDSBERRY, F. L.
Submergible Barge Retrievable Storage and Permanent Disposal System for Radioactive Waste.
PAT-APPL-6-106 203 1424

GOLDSTEIN, IRWIN
Modifications to Devenco Model PPS-3A Radar Fence.
AD-885 234/5 1413

Perimeter Protection System.
AD-503 039/0 1413

GOLDSTEIN, J. A.
Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411

GOLDSTEIN, ROBERT
An Interactive Computer System for Evaluating Coal Mine Illumination.
PB81-125528 1348

GOLDSTEIN, S. A.
NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

GOLDSTEIN, SHYKE A.
Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414

GOLUB, ABRAHAM
1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

GOMER, FRANK E.
Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308

GOMES, P. R. S.
Determination of Fano's Factor in Semiconductors.
INIS-mf-5648 1451

GONCZ, JOHN H.
Relationship between Ms and mb for Small Earthquakes in Uzbekistan, USSR.
AD-A091 984/5 1349

GONDA, K.
Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

GOODE, JONATHAN M.
Clutch Protection Circuit.
PATENT-4 227 232 1361

GORBICS, S. G.
Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.

AD-A950 102/4 1327

GORDON, PHILLIPS N.
Old Theories versus Changing Environment,
AD-A091 951/4 1308

GORDON, S. J.
Williams Air Force Base Air Quality Monitoring Study,
AD-A092 165/0 1381

GORSTEIN, MARK
Airport Ground Access Planning Guide.
AD-A092 018/1 1290

GOTHE, RAINER
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319

GOTT, C. O.
Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

GRAEBER, GEOFFREY M.
Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

GRAHAM, R. A.
Active Measurements of Defect Processes in Shock Compressed Metals and Other Solids.
SAND-80-1945C 1372

GRAHAM, RALPH W.
Preliminary Outline of Gunner Duties and Tasks for US/FRG MBT-70.
AD-A950 106/5 1436

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section I. Automotive Maintenance.
AD-A950 104/0 1434

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section II. Turret Maintenance.
AD-A950 105/7 1434

GRAKLANOFF, G. J.
Expanded Phase I ACS Experiments. Volume II. Design Requirements for a Prototype Cartographic Finishing Subsystem.
AD-893 140/4 1340

GRANATSTEIN, VICTOR L.
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

GRANT, N. J.
An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367

GRASLEY, C.
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

GRASSO, J. A.
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303

Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304

GRAULICH, MARK
Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408

GREENBERG, PAUL D.
Quality of Worklife Programs: A Preliminary Technology Assessment,
PB81-125379 1309

GREENE, BRADFORD M.
Evaluation of Alternative Interment Methods for National Cemeteries.
PB81-123879 1309

GREENE, E. M.
Spent Fuel Data for Waste Storage Programs.
HEDL-TME-79-20 1424

GREENE, J. M.
Second Region of Stability.
PPPL-1715 1448

GREENE, N. M.
SACRD: A Data Base for Fast Reactor Safety Computer Codes. Operational Procedures.
ORNL/CSD-53 1428

GREENLY, G. D.
Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

GREENSPAN, E.
Developments in Sensitivity Theory.
CONF-800942-10 1430

GREENSTADT, EUGENE W.
A Study of the Association of Pc 3, 4 Micropulsations with Interplanetary Magnetic Field Orientation & Other Solar Wind Parameters.
AD-A092 369/8 1292

GREENWALD, ANTON C.
HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450

GREER, H.
Cost Estimating Procedure for Unmanned Satellites.
AD-A092 458/9 1457

GREGG, M. C.
Reprint: Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.
AD-A092 327/6 1341

GREGORY, PAULA E.
Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317

GREINER, JOHN F.
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409

GRESHAM, J. B.
Comparative Ranking of 0.1-10 MW/sub E/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
SERI/TR-351-461 1366

GRIEM, H. R.
Preheat Studies on Laser Ablatively-Accelerated Foils.
NRL-MR-4356 1417

GRIFFIN, D. E.
Reprint: Isolation and Characterization of Minicell-Producing Mutants and Shigella spp.
AD-A091 918/3 1317

GRIFFIN, G. D.
Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.
CONF-8010108-2 1319

GRIFFIN, JEFFREY W.
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

GRIFFIN, PATRICK M.
Interaction Effects of Simultaneous Torsional and Compressional Cyclic Loading of Sand.
AD-A092 352/4 1350

GRIGGS, M.
Satellite Measurements of Atmospheric Aerosols.
AD-A092 152/8 1293

GRIMES, GEORGE J. JR.
Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325

GRIMES, RUSSELL N.
Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331

Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332

GRINER, R.
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
AD-A092 203/9 1309

GRISEZ, TED J.
Flowering and Seed Production in Seven Hardwood Species.
PB81-141996 1292

GRISS, M.
Symbolic Software for CTR Research.
UCRL-15284 1419

GROBLER, F. C.
Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367

GROOM, CARL
INTERAND Target Annotation System.
AD-B001 109/8 1435

GROSS, JAMES P.
Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
AD-923 272/9 1358

GROWER, MARVIN
Evaluation of a New Thermoplastic Gutta Percha Obturation Technique Using 45Ca.
AD-A092 391/2 1319

GRUMMER, WILLIAM L.
Non-Fouling Print Stylus.
PATENT-4 206 466 1399

GRUSH, W. H.
Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
CONF-801102-1 1427

GRYCAN, JAKUB
Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings--Translation.
AD-A092 095/9 1351

GRYCZKOWSKI, G. E.
Buildup Studies of a Tandem Mirror Reactor with Inboard Thermal Barriers.
UCRL-84233 1419

GUASP, J.
Plasmator. A Numerical Code for Simulation of Plasma Transport in Tokamaks.
JEN-459 1417

GUDIKSEN, P. H.
Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

GUESS, HARRY A.
Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329

GULKAN, POLAT
Strength of Timber Roof Connections Subjected to Cyclic Loads.
PB81-139222 1395

GUNDERSEN, M. A.
Studies of Transient Discharges.
AD-A092 482/9 1437

GUNTER, E. J.
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454

GUO, M. K.
Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate CaHPO4.2H2O Formation,
PB81-126088 1320

GURALNIK, G. S.
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443

GURNETT, DONALD A.
Reprint: A Test of Two Theories for the Low-Frequency Cutoffs of Nonthermal Continuum Radiation.
AD-A092 086/8 1293

Reprint: The Volume Emissivity of Type III Radio Bursts.
AD-A091 895/3 1292

GUSTELY, RICHARD
Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
PB81-139305 1301

GWATKING, J. C.
Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
AD-A091 957/1 1353

GWIN, ROY E. JR.
A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291

HAGEMAN, L. J.
A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
AD-B015 193/6 1433

HAGEMAN, LAURA J.
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435

HAHS, T. S.
AR Film on Phase-Separated Glass. Final Report, January 1979-April 1980.
UCRL-15285 1440

HAIMES, ROBERT
Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293

HALL, D. G.
Tables of Homogeneous Equilibrium Critical Flow Parameters for Water in SI Units.

EGG-2056 1427

HALL, DOUGLAS
Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1363

HALL, THOMAS L.
Schools of Public Health Trends in Graduate Education.
HRP-0902582/6 1306

HALLE, J. H.
High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

HALLERMEIER, ROBERT J.
Reprint: Sand Motion Initiation by Water Waves: Two Asymptotes.
AD-A092 045/4 1341

HALLIBURTON, L. E.
Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

HALLOCK, HIRAM
Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
AD-A091 964/7 1374

HALTER, J. M.
Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347

HAMASAKI, S.
Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415

One-Dimensional Model Calculations of EBT-P Performance.
DOE/ER/53092-T1 1415

HAMILTON, G. W.
Negative Deuterium Ions for Tandem Mirror Next Step and Tandem Mirror Reactors.
UCRL-84888 1420

HAMILTON, MARK A.
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326

HAMLYN, P. R.
Reprint: Aragonite from Deep Sea Ultramafic Rocks.
AD-A091 967/0 1342

HAMMARSTROEM, ULF
Maetning av Braenslefoerbrukning pa Landsvaeg: Elfektstudier vid Olika Vaeg- och Trafikmiljoeer (Measurement of Fuel Consumption on Country Roads: Study of Effects of Different Road and Traffic Situations),
PB81-130767 1363

HAMMELL, T. J.
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303

Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304

HAMMONS, ANNA S.
Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322

HAN, YOUN WOO
Solubilization of Lignocellulosic Materials.
PAT-APPL-6-180 546 1338

HANCOCK, E. B.
Reprint: Influence of Interdental Contacts on Periodontal Status.
AD-A092 425/8 1319

HANLEY, D. V.
MAKSIMA-CHEMIST: A Program for Mass Action Kinetics Simulation by Automatic Chemical Equation Manipulation and Integration Using Stiff Techniques.
AECL-6413 1335

HANLEY, S. T.
Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

HANNAFORD, PHILIP STEPHEN
An Analysis of the Problems Involved in the Utilization of Merchant Shipping to Support the U.S. Government during Declared Mobilization Situations.
AD-A092 421/7 1401

HANNAH, S.
New Passivation Methods of GaAs.
AD-A092 354/0 1450

HANSON, R. G.
Experimental Determination of Lower Plenum ECC Injection Effectiveness.
CONF-801102-12 1427

HANZLICK, DENNIS
Reprint: Freshwater and Atlantic Water in the Kara Sea.
AD-A091 965/4 1348

HARDY, D. A.
Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 878/9 1292

HARDY, RALPH JR.
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
PB81-124687 1320

HARMON, DALE L.
Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
PB81-122723 1384

HARMON, JERREL R.
Reprint: Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
PB81-120701 1340

HARNEY, ROBERT C.
Design Considerations for the Infrared Airborne Radar (IRAR) MTI Subsystem.
AD-A091 927/4 1411

HARP, JIMMY F.
Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
PB81-124158 1384

HARPER, ROBERT J. JR.
Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369

HARRAR, J. E.
Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

HARRIS, ANDREW S.
A Guidance Document on Airport Noise Control.
AD-A092 228/6 1290

HARRIS, DOUGLAS H.
Ferrite/Dielectric High Power Phase Shifter Development. Part IV. Arc-Plasma Spray Fabrication and Material Studies.
AD-912 792/9 1360

HARRIS, J. S. JR.
1.06 Micrometer High Sensitivity IR Photocathode.
AD-918 930/9 1411

HARRIS, L. A.
Observation of Dislocations and Twins in Explosively Compacted Alumina.
CONF-800641-7 1367

HARRIS, LARRY R.
Natural Language Data Base Query.
AD-A092 500/8 1302

HARRISON, J. R.
Summary of Aviation Safety Program Resumes. Cabin Safety.
AD-A091 938/1 1288

HART, C. E.
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289

HARTMAN, R. B.
Treatment of Primary Effluent by Rapid Infiltration.
PB81-129124 1386

HARTMANN, S. R.
Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335

HARTNAGEL, H. L.
New Passivation Methods of GaAs.
AD-A092 354/0 1450

HARTSOCK, J. H.
Investigation and Evaluation of Geopressured-Geothermal Wells.
DOE/ET/28460-5 1345

HARWOOD, M. J.
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323

HATCHWELL, JOSEPH A.
Concepts for Data Collection in the Arctic.
AD-A092 476/1 1349

HATFIELD, JOHN
Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
AD-A092 370/6 1305

HATHAWAY, STEVEN W.
Wastewater Alternatives for Small Communities,
PB81-131658 1386

HATHAWAY, W. T.
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389

HAUSTEIN, P. E.
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420

HAVEL, RICHARD WILLIAM
Experimental Study of Contrast Utilizing a Vidicon.
AD-A092 407/6 1351

HAVENS, JAS. H.
Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388

HAWKINS, CYNTHIA E.
Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329

HAWKINS, STEPHEN G.
RTC CREDO: Initial Assessment.
AD-A092 280/7 1304

HAYDE, P. R.
Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424

HAYES, MILES O.
Reprint: General Morphology and Sediment Patterns in Tidal Inlets.
AD-A092 115/5 1341

HAYES, WOODROW L.
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

HAYWOOD, F. F.
Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426

HEARD, J. L.
Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
AD-B004 191/3 1290

HEARL, JAMES E.
Burn-In of Uncased Semiconductors. A Feasibility Study.
AD-A092 076/9 1351

HEATH, GREGORY GARVER
An Interactive Code for a Pressurized Water Reactor Incorporating Temperature and Xenon Feedback.
AD-A092 304/5 1427

HECK, JAMES D.
Evaluation/Redesign of the F-105 Pitch Rate Gyro Pack.
AD-A092 109/8 1412

HECKMAN, P. J. JR.
Handbook of Underwater Imaging System Design.
AD-904 472/8 1409

HEDAYAT, A.
Construction of PBIB Designs with Triangular and L2 Schemes.
AD-A092 190/8 1376

HEDLUND, KENNETH W.
The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
AD-A092 267/2 1318

Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318

A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
AD-A092 286/4 1318

HEEBNER, DAVID R.
Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

HEFNER, DENNIS
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
PB81-124687 1320

HEIMBUCH, RAYMOND J.
Evaluation of Alternative Interment Methods for National Cemeteries.
PB81-123879 1309

HEIMERL, J. M.
A Congeries of Numerical Models used at the BRL.
AD-A091 886/2 1434

HEINZ, R. M.
Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
DOE/ER/02009-139 1443

HEITZ, CH.
Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

HELDENBRAND, JIM L.
A 'Reference Building' Approach to Building Energy Performance Standards for Single-Family Residences.
PB81-135642 1380

HELENBROOK, R. G.
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.

PERSONAL AUTHOR INDEX

BN-SA-1064 1379

HELLAND, ARDEN
Architecture for Higher Level Digital Image Processing.
AD-A091 994/4 1354

Architecture for Higher Level Digital Image Processing.
AD-A092 153/6 1355

HELLIWELL, WILLIAM S.
Viscous Flow over Arbitrary Geometries at High Angle of Attack,
AD-A091 971/2 1438

HELM, D. VAN DER
Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

HELMINIAK, THADDEUS E.
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332

HELMS, C. R.
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351

HENDERSHOTT, PATRIC H.
Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency.
PB81-139032 1301

HENDERSON, LAWRENCE
Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348

HENDRY, A. W.
Theoretical Particle Physics. Progress Report, December 1, 1079-November 30, 1980.
DOE/ER/02009-140 1443

HENKE, B. J.
Reprint: Evaluation of High Efficiency CsI and CuI Photocathodes for Soft X-Ray Diagnostic.
PB81-121006 1353

HENN, JAMES FRANCIS
Exchange Service Station Gasoline Pumping Operation Simulation.
AD-A092 278/1 1378

HENRY, J. D. JR.
Improved Electrostatic Coalescense System with Independent AC and DC Hydrophilic Electrodes.
PAT-APPL-6-110 738 1337

HENSLEE, S. P.
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

HERLEVICH, F. A.
Comparative Ranking of 0.1-10 MW/sub E/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
SERI/TR-351-461 1366

HERRMANNSFELDT, W. B.
Proceedings of the Heavy Ion Fusion Workshop.
LBL-10301 1441

HESS, B. C.
Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
PB81-142192 1337

HESS, F. R.
Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407

HESS, LILLIAN
Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348

HESS, ROBERT L.
Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

HETRICK, D. M.
GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
ORNL/TM-7341 1446

HETZEL, OTTO J.
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,
PB81-139016 1310

HEUCHLING, T. P.
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379

HEUER, A. H.
Reprint: Plastic Deformation of Fine-Grained Alumina (Al_2O_3): II, Basal Slip and Nonaccommodated Grain-Boundary Sliding,
PB81-121543 1368

HEWITSON, VICTORIA S.
European Scientific Notes. Volume 33, Number 5,
AD-A092 024/9 1297

HICKLIN, MARY
Ground Controlled Approach Controller Training System (GCA-CTS) Student Guide.
AD-A091 930/8 1303

HICKOK, R. L.
Heavy Ion Beam Probing.
DOE/ET/53004-2 1447

HICKS, BRUCE
MC Painting Manual A: User's Guide. The Illinois Series on Educational Applications of Computers, No. 33. Revised Edition,
ED-183 201 1306

HIDDEN, W. P.
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379

HIGASHI, G. I.
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

HIGGINS, E. A.
Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
AD-A092 268/2 1328

HIGGINS, PETER J.
Security Assistance Data Element Catalog (SADEC).
AD-A092 166/8 1355

HILBERS, G. RICHARD
Titan Vehicle Electrostatic Environment.
AD-913 898/3 1457

HILL, A. R.
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

HILL, HARRY W.
Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341

HILLER, H.
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292

HILLESTAD, CAROL
Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139164 1312

HILLESTAD, R. J.
Models and Techniques for Recoverabie Item Stockage when Demand and the Repair Process are Nonstationary. Part I. Performance Measurement.
AD-A091 935/7 1401

HIND, G.
Energetic Control of Intact Chloroplast Photosynthesis.
BNL-28423 1315

Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315

HINNOV, E.
Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418

HINRICHSEN, E. N.
MOD-2 Wind Turbine Farm Stability Study.
DOE/NASA/0134-1 1365

HINSHAW, GARY D.
Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385

HINTON, D. E.
Effects of Effluents of Coal Combustion and Gasification Upon Lung Structure and Function. Annual Report.
DOE/MC/11284-T2 1328

HINTZ, ROBERT T.
Laser Safety Computer Program.
AD-B032 525/8 1439

HIPPLER, ROBERT R.
Foundation Piles for Land Construction. December, 1976-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850240 1395

Foundation Piles for Marine Platforms. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850232 1393

HIRNING, C. ROSS
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326

HITNEY, H. V.
Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452

HJALMARSON, H. P.
Theory of Core Excitons.
DOE/ER/01198-1323 1450

HJELMELAND, LEONARD M.
Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
PAT-APPL-6-181 465 1332

HO, C.
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390

HO, R.
Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354

HOBBS, NORMAN P.
Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
AD-A091 978/7 1435

HOCKENBURY, R. W.
Development and Testing of a Model for Fire Potential in Nuclear Power Plants.
NUREG/CR-1819 1422

HOCKEY, B. J.
Reprint: Effect of Particle Impact Angle on Strength Degradation of Glass.
PB81-121493 1368

Reprint: Thermal Effects in Sharp-Particle Contact.
PB81-119851 1367

HODGES, M. E.
Safety Evaluation of a Conceptual Fuel Recycle Complex.
DP-MS-80-6 1429

HOEKSEMA, J. T.
Reprint: Origin of the Warped Heliospheric Current Sheet.
AD-A091 898/7 1292

HOFFLINGER, DAVID HOWARD
An Application of Case-Mix Adjusted Lengths of Stay in Naval Medical Treatment Facility's Output Measurement.
AD-A092 409/2 1319

HOFFMAN, LINWOOD A.
The Impact of Demand-Sensitive Railroad Rates Upon the Storage and Transportation System for U.S. Feed Grains.
PB81-134165 1291

HOFFMAN, MARK H.
Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
AD-923 272/9 1358

HOFFMAN, N. J.
Properties of Lead-Lithium Solutions.
UCRL-84273 1419

HOFFMAN, R. E.
Silicon Target Return Beam Vidicon.
AD-923 171/3 1352

HOLADAY, JOHN W.
Reprint: Experimental Endotoxin Shock: The Pathophysiologic Function of Endorphins and Treatment with Opiate Antagonists.
AD-A091 919/1 1317

Reprint: Naloxone Alteration of Physiological Parameters in Spinally Transected Animals.
AD-A092 340/9 1325

Reprint: Opiate-Like Effects of Electroconvulsive Shock in Rats: A Differential Effect of Naloxone on Nociceptive Measures.
AD-A092 341/7 1325

HOLLEMAN, JAMES W.
Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322

HOLLISTER, CHARLES D.
Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349

HOLM, R. A.
GCFR Steam Generator Conceptual Design.
GA-A-15894 1428

HOLMAN, ALAN B.
Spacecraft Charging Standard Report.
AD-A091 953/0 1456

HOLT, R. J.
Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(Rev.1) 1441

HOLTZMAN, J. C.
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.

AD-A092 077/7 1412

HOLUB, DANIEL T.

An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
PB81-132334 1321

HOLZGRAF, J. F.

Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367

HOMAN, B. BERT

Low Frequency Geomagnetic Fluctuations (.04 to 25 Hz) on Land and on the Floor of Monterey Bay.
AD-A092 399/5 1411

HOMAN, C. G.

Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
AD-A091 997/7 1450

HOMEYER, W. G.

Vacuum Pumping Concepts for ETF.
GA-A-16071 1393

HONG, Y. C.

Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate CaHPO4.2H2O Formation,
PB81-126088 1320

HOOGEREEN, A. W.

Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
PB81-125189 1338

HOOGSTRAAL, HARRY

Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316

HOOSTRAAL, HARRY

Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319

HOOVER, THOMAS P.

Erosion Control Product Testing Using Rainfall Simulation.
PB81-132995 1386

HOPKE, PHILIP K.

Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383

HOPKINS, G.

Ceramic Materials for Fusion Reactors. Interim Report.
EPRI-AP-1499 1367

HOPKINS, G. R.

First Wall Engineering and Technology in Fusion.
GA-A-16089 1416

HOPKINS, R. H.

Silicon Web Process Development.
DOE/JPL/954654-80/12 1331

HOPPER, M. J.

Harwell Subroutine Library. A Catalogue of Subroutines (1973),
AD-A092 033/0 1375

Harwell Subroutine Library. A Catalogue of Subroutines (1973). Supplement Number 2.
AD-A092 034/8 1375

HORD, WILLIAM E.

Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
AD-912 789/5 1360

HORN, KEITH A.

Chemically Initiated Electron-Exchange Luminescence.
AD-A092 355/7 1334

HORTON, J. R.

State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393

HORTON, MAURICE L.

A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291

HORTON, R. F.

Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

HOSHOVSKY, ALEXANDER

Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297

HOSKIN, B. C.

Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
AD-A091 962/1 1288

HOSSAIN, M. B.

Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

HOSSAIN, S. FAZLEY

Carbon Dioxide Activation; Formation of trans- (Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

HOTCHKISS, ROLLIN H.

Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344

HOUBOLT, JOHN C.

Design Manual for Vertical Gusts Based on Power Spectral Techniques.
AD-879 736/7 1289

HOULBERG, W. A.

Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.
ORNL/TM-7124(Dr) 1417

HOUSTIS, ELIAS N.

A Population of Linear, Second Order, Elliptic Partial Differential Equations on Rectangular Domains. Part 1.
AD-A092 248/4 1376

HOUSTON, R. M.

Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
AD-B000 632/0 1409

HOUSTON, WILLIAM N.

Interaction Effects of Simultaneous Torsional and Compressional Cyclic Loading of Sand.
AD-A092 352/4 1350

HOUTZ, ROBERT E.

Reprint: Seafloor and Near-Surface Sound Velocities from Barents Sea Sonobuoy Data.
AD-A091 966/2 1436

HOVARONGKURA, A. D.

Improved Electrostatic Coalescense System with Independent AC and DC Hydrophilic Electrodes.
PAT-APPL-6-110 738 1337

HOVINGH, J.

Parametric Analysis of Stress in the ICF HYLIFE Converter Structure.
UCRL-84272 1419

HOWARD-PEEBLES, PATRICIA N.

Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317

HOWARD, PHILIP H.

Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

HOWARD, R. A.

The Equatorial Latitude of Auroral Activity during 1972-1977,
PB81-132912 1294

HOWE, H. C.

Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.
ORNL/TM-7124(Dr) 1417

HOWELL, J. F.

Software for Communication Between a Hewlett Packard 9825 Process Control Computer and a Honeywell 66/60 Time Sharing Computer.
GEPP-TIS-534 1357

HOWELL, JULIANNE REICH

Regulating Hospital Capital Investment: The Experience in Massachusetts. Executive Summary.
PB81-130544 1321

Regulating Hospital Capital Investment: The Experience in Massachusetts. Final Report.
PB81-130551 1321

HOWELL, STEPHEN J.

Improved Film Cooled Annular Combustor.
PAT-APPL-6-185 473 1455

HSEIH, C. C.

Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate CaHPO4.2H2O Formation,
PB81-126088 1320

HSIAO, DAVID K.

Design and Analysis of Relational Join Operations of a Database Computer (DBC).
AD-A092 230/2 1355

HSIEH, E. J.

Recent Advances in Pt Coating of Microspheres by a Batch Magnetron Sputtering Process.
UCRL-84478 1420

HSU, S. C.

Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

HSU, Y. H.

Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
GA-A-16013 1416

HSUAN, H.

Mode Converter for Electron Cyclotron Resonance Heating of Toroidal Plasmas.
PPPL-1697 1418

HU, SHENG CHENG

Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency,
PB81-139032 1301

HUANG, J. C.

Computer Code to Assess Accidental Pollutant Releases.
DP-1552 1426

HUANG, S. N.

Seismic Analysis of Piping with Nonlinear Supports.
HEDL-SA-1994-FP 1428

HUBBARD, R. W.

Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 268/0 1327

HUBBELL, W. C.

Magnetic Bubble Research.
AD-B002 919/9 1437

HUBBLE, E. NADINE

Program PHFMOPT, Planing Hull Feasibility Model, User's Manual.
AD-B033 624/8 1393

HUBER, E.

New Passivation Methods of GaAs.
AD-A092 354/0 1450

HUBLER, G. K.

Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

HUDSON, M. C.

Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
AD-B040 437/6 1331

HUDSON, W. RONALD

Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384

HUFFMAN, G. DAVID

Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454

HUFFMAN, JAMES L.

The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387

The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387

The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
PB81-138158 1387

HUFFMAN, JOHN C.

Facile Cleavage of the Mo= Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

HUFFMAN, R. E.

Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

HUGGS, CHARLES N.

An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
PB81-132334 1321

HUGHES, ROBERT GORDON

Kinematic Features of the Large-Scale Mean State Phase II of Gate and Comparison with Phase III Features.
AD-A092 444/9 1295

HULETT, RICHARD H.

Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/8 1379

HUMPHREY, WILLIAM A.

Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433

HUNG, JOSH

Architecture for Higher Level Digital Image Processing.
AD-A091 994/4 1354

HUNKLER, LOUIS T.

Dynamic Color Scanner System.
AD-B015 629/9 1352

HUNSINGER, BILL J.

Low Loss Wideband Acoustic Delay Line.

AD-923 650/6 1352

HUNT, DONALD F.
Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
AD-A092 497/7 1335

HUNT, R. G.
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432

HUNTER, WILLIAM C.
Financial Needs of Small Minority Firms.
PB81-128852 1300

HUNTINGTON, H. B.
Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
AD-A092 118/9 1333

HURWITZ, RAE B.
Analysis of Wake Survey Experimental Data for Model 5365 Representing the R/V ATHENA in the DTNSRDC Towing Tank.
AD-A092 246/8 1392

Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392

HUSEMAN, RICHARD
Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
AD-A092 370/6 1305

HWANG, H. S.
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
DOE/ET/15383-18 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
DOE/ET/15383-22 1364

Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364

HYDE, L. L.
Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428

HYDER, L. K.
Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
ORNL/EIS-156/V1 1424

HYLEN, J.
Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters.
DOE/ER/14529-1 1422

HYNES, A. G.
Evaluation of the Scott Aviox Emergency Oxygen System during a Rapid Decompression to 25,000 Feet.
AD-A092 204/7 1323

IGNASZEWSKI, MARK J.
The Gulf Stream Meanders Experiment. Hydrographic Data Report. R/V Endeavor Cruises, EN-040 (2-8 August 1979) EN-045 (16-23 November 1979).
AD-A092 144/5 1349

IKEZOE, Y.
Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454

IMEL, G. R.
Neutronics Calculations for the TFTR Neutron Calorimeter.
PPPL-1695 1418

INGRAM, R. L.
First Technical Contractors' Conference on Peat. Final Report.
DOE/ET/10159-T3 1342

Peat Resources of North Carolina. Quarterly Progress Report.
DOE/ET/10159-T1 1342

ISAKSON, PER
Flat Plate Thermal Solar Collectors: A Physical Background.
PB81-135741 1363

ISENBERG, J.
Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429

ISHIDA, Y.
Moessbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371

ISHIKAWA, PAUL JR.
Summary of the Western Energy Overhead Monitoring Project.
PB81-129009 1385

ISRAELSEN, EUGENE K.
Management of the Hydrologic System in Areas Subject to Coal Mining Activities.
PB81-127383 1344

ITO, YOICHIRO
Horizontal Flow-Through Coil Planet Centrifuge.
PATENT-4 228 950 1396

ITOH, TATSUO
Reprint: Spectral Domain Analysis of Dominant and Higher Order Modes in Fin-Lines.
AD-A092 120/5 1351

IVANOV, E. A.
Structure of Representations of Conformal Supergroup in the OSp(1,4) Basis.
JINR-R-2-12670 1449

IWAN, W. D.
Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980.
PB81-120081 1350

IZUMI, IKUICHIRO
The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339

IZUMITANI, T.
Investigation on the Damage Threshold of Films Coated on Various Silicate, Fluorophosphate and Phosphate Laser Glasses. Final Report, January 1, 1979-August 29, 1980.
DOE/DP/40096-1 1440

JACKSON, CAL
The Improved JCVS.
AD-923 431/1 1356

JACKSON, DENNIS MICHAEL
Production Rule Systems as an Approach to Interpretation of Ground Sensor Information.
AD-A092 282/3 1355

JACKSON, DONALD G.
Some Applications of Hybrid Thick Film Technology.
AD-917 846/8 1360

JACKSON, H. E.
Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(Rev.1) 1441

JACKSON, M. L.
Exchange of Lyotropic Series Cations by Micaceous Vermiculite and its Weathering Products Determined by Electron Microscopy and Radiochemical Analysis. Final Technical Report, June 1, 1965-October 31, 1978.
DOE/EV/01515-84 1426

JACKSON, ROBERT RAWLINGS JR.
Navy Civilian Careers: A Formulation Problem.
AD-A092 406/8 1305

JACKSON, RUDOLPH S.
Schools of Public Health Trends in Graduate Education.
HRP-0902582/6 1306

JACOBS, T. P.
Reprint: Naloxone Alteration of Physiological Parameters in Spinally Transected Animals.
AD-A092 340/9 1325

JAFFE, R. L.
Normalizing the Renormalization Group in Deep Inelastic Leptoproduction. CTP No. 878.
CONF-800724-44 1443

JAHRLING, PETER B.
Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

JAIN, VIJAY K.
Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358

Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

JAKOBSON, M. J.
Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

JANSSEN, WERNER
Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318

JANSSON, L.
Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

JAWAHERY, A.
Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters.
DOE/ER/14529-1 1422

JAWOROWSKI, A.
Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

JEFFERSON, GORDON ROSS
Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
AD-A092 469/6 1396

JENQ, YIH-CHYUN
Reprint: Threshold Effect on Error Probability in QAM Systems.
AD-A092 122/1 1408

JENSEN, D. E.
Production of Nitrous Oxide in a Rocket Motor Exhaust.
AD-A091 893/8 1380

JEPPESEN, R. H.
Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

JEVICKI, A.
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443

JEWELL, DAVID H.
Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16.
AD-A092 392/0 1392

JEWETT, WAYNE M.
Performance of ANDVT HF Modem with Peak Clipping.
AD-A092 114/8 1408

JIMENEZ, THOMAS R.
Annotated Bibliography of Reports. Supplement Number 11, 1 October 1978 - 30 September 1979.
AD-A092 160/1 1318

JOCHUM, CLEMENTS
UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
AD-A092 213/8 1333

JOHNSON, ALLEN L.
Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
AD-A092 084/3 1293

JOHNSON, B. M.
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379

JOHNSON, C. E.
Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys.
PB81-121865 1372

JOHNSON, C. M.
Mobile Ambient Air Monitor.
RFP-3010 1398

JOHNSON, CHRISTIAN E. SR.
Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368

JOHNSON, K. J.
Open and Hidden Charm Muoproduction.
LBL-11561 1446

JOHNSON, WILLIAM D.
A Study of Budget Formulation in the Fleet Marine Force.
AD-A092 401/9 1296

JOHNSTON, GENE
Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436

JOHNSTON, JAMIE N. JR.
Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304

JONES, DALE C.
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321

JONES, H. M.
Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

JONES, J. D.
Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.

CONF-8010108-2 1319

JONES, J. W.
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

JONES, M.
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
AD-A091 933/2 1359

JONES, SALLY JO
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
PB81-125619 1303

CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
PB81-126047 1300

CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
PB81-126039 1300

JONES, STEPHEN L.
Laundry Heat Recovery, USMA, West Point.
AD-A092 060/3 1378

JONES, THOMAS H.
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

JONG, R. A.
Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
DOE/ET/53087-2 1448

JOUNIAUX, B.
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

JOYCE, TERRENCE M.
Reprint: On Production and Dissipation of Thermal Variance in the Oceans.
AD-A092 486/0 1349

KABAT, F.
Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354

KACHRU, R.
Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335

KAITZ, EDWARD M.
Overhead Costs and Rates in the U.S. Defense Industrial Base. Volume 1.
AD-A091 963/9 1299

KAKOROWOSKI, STANISLAW A.
Automatic Bandwidth Control System.
PAT-APPL-6-185 472 1412

KALAL, GERALD
Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436

KALMBACH, S. H.
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

KALMIJN, AD. J.
Reprint: Migration Rate of Mud Bacteria as a Function of Magnetic Field Strength.
AD-A092 326/8 1340

KAMINSKI, MITCHELL V.
Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

KAMINSKY, DAVID
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study,
PB81-138968 1310

KANAK, B. E.
Method for Improving Dissolution Efficiency in Gas-Absorption and Liquid Extraction Processes.
PAT-APPL-6-111 495 1337

KANG, K.
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443

KAPLAN, M.
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

KARADI, G. M.
Synthesis of Research and Development in Mechanical Energy Storage Technologies. Progress Report, September 1, 1979-May 31, 1980.
DOE/ET/26106-T1 1366

KARAFIATH, LESLIE L.
Analytical Model for the Turning of Tracked Vehicles in Soft Soils.
AD-A092 277/3 1434

KARAKI, S.
Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

KARICKHOFF, SAMUEL W.
Reprint: Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
PB81-129470 1339

KARL, ALVA A.
Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325

KARPP, R. R.
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435

KASCHIEV, M.
Calculation of Energy Levels of mu -Mesic Molecules of Hydrogen Isotopes Using a Continuous Analog of the Newton Method and Subspace Iteration Method.
JINR-R-4-12671 1339

KASSING, DAVID B.
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401

KASTE, ROBERT P.
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436

KATO, C.
Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

KATZ, P. G.
Green River Basin Flow Forecasting Models.
PB81-124448 1343

KATZEFF, J. S.
Laser Annealing of Ion Implanted CZ Silicon for Solar Cell Junction Formation. Quarterly Report No. 2.
DOE/JPL/955696-80/2 1365

KATZENELSON, E.
Disinfection of Viruses in Water by Ozone.
AD-A092 252/6 1318

KAUFMAN, I.
European Scientific Notes. Volume 33, Number 5,
AD-A092 024/9 1297

KAUFMAN, LESLIE S.
On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
PB81-132094 1340

KAUL, CHARLES E.
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287

KAWAHARA, FRANCIS K.
Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421

KAWAOKA, KEITH E.
Military Wastes-to-Energy Applications.
PB81-132227 1386

KAWASAKI, S.
Zircaloy Cladding Embrittlement Due to Steam Oxidation in Stagnant Steam Condition.
JAERI-M-8081 1371

KEGELMAN, J. T.
Reprint: Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body.
AD-A092 494/4 1438

KEIRANS, JAMES E.
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316

KEISER, J. R.
Materials for Conoco Zinc Chloride Hydrocracking Process.
CONF-801079-2 1453

KELLER, D.
Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348

KELLER, MARTIN D.
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321

KELLEY, EDWARD M.
A Methodology for Predicting Ammunition Requirements as a Function of Force Size.
AD-B013 302/5 1432

KELLEY, ROBERT
Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
PB81-132557 1317

KELLMAN, A.
High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

KELLY, J. M.
Development and Testing of Restraints for Nuclear Piping Systems.
UCB/EERC-80/21 1422

KELLY, PATRICIA
CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
PB81-126047 1300

KELLY, PATRICIA F.
CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
PB81-126039 1300

KELSEY, P. V. JR.
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

KELSO, FRANK W.
Data Link, Helicopter Supported Radar.
AD-885 551/2 1413

KEMP, GEOFFREY
U.S. Maritime Interests in the South Atlantic. Appendix I.
AD-B025 005/0 1302

U. S. Maritime Interests in the South Atlantic. Appendix II.
AD-B025 006/8 1302

KEMPE, E. E.
A New Theory for Striations with Experimental Verifications.
AD-A092 058/7 1447

KENDALL, WALTER ANTHONY
Personal, Situational, and Organizational Determinants of Navy Enlisted Attrition.
AD-A092 412/6 1305

KENNEDY, T. DAVID
Magnetic Separation of Materials. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855231 1391

Magnetic Separation of Materials. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855249 1391

KERIVAN, JOHN E.
The Effects of Earplugs and Earmuffs on Pitch Discrimination in Noise.
AD-B039 142/5 1326

KERKOR, M.
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318

KERMICLE, J. L.
Organization of the R Chromosome Region in Maize. Triennial Report.
DOE/EV/01300-45 1316

KERTH, L. T.
Open and Hidden Charm Muoproduction.
LBL-11561 1446

KESSLER, S. W.
Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351

KEVILLE, MICHAEL THOMAS
An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
AD-A092 307/8 1368

KEYLON, GEORGE E.
Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
AD-894 188/2 1438

KHALIL, GALILA M.
Reprint: The Subgenius Persicargas (Ixodoidea; Argasidae; Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
AD-A092 462/1 1316

Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327

KHALIL, S. R.
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

KHAN, A. HAMEED
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

KHOE, T. K.
Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(Rev.1) 1441

KIDNAY, A. J.
Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, April-June 1979 and July-September 1979.
DOE/ET/13395-1/2 1453

Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, October-December 1979 and January-March 1980.
DOE/ET/13395-3/4 1453

Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, April-June 1980.
DOE/ET/13395-5 1453

Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, July-September 1980.
DOE/ET/13395-6 1453

KILLEEN, J.
Numerical Solution of Initial-Value Problems in Plasma Physics.
UCRL-85033 1448

KILMER, E. EUGENE
A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432

A Characterization Study of Several Heat Resistant Explosives in Mild Detonating Cords.
AD-B015 229/8 1433

KILTER, J.
Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

KIM, HYUN K.
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
PAT-APPL-6-172 086 1325

KIM, J.
Implications of Tritium in Neutral Beam Injectors.
CONF-800427-19(Dr) 1414

ISX-B Neutral Beams and the Beam Target Experiment.
ORNL/TM-7452 1418

KIMBALL, J. A.
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352

KIMMEL, G.
Computer Program for the Determination of X-Ray Reflections from a Randomly Oriented Polycrystalline Sample by Diffractometer.
NRCN(TN)-023 1437

KING-HELE, D. G.
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292

KING, L. J.
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(Dr) 1420

KING, PAUL H.
Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
PB81-127391 1385

KING, STEPHEN B.
Development of a Two-Piece Mask and Lens and Mold for Same.
AD-A092 380/5 1326

KINGSLEY, G. THOMAS
Analyzing Allowance Program Administrative Costs: Account Structures and Methodology.
PB81-139412 1314

KINSEY, R.
Data Formats and Procedures for the Evaluated Nuclear Data File, ENDF.
BNL-NCS-50496(Ed.2) 1441

KIOKA, WATARU
A Green-Function Method for Wave Interaction with a Submerged Body,
PB81-122269 1438

KIRK, RUSSELL D.
Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335

KIRKBRIDE, R. A.
Inventory of Calcined Waste Stored at the ICPP as of September 1979.
ENICO-1044 1424

KIRKPATRICK, CHARLES C.
Facile Cleavage of the Mo≡ Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

KIUCHI, K.
Metallurgical and Environmental Factors Influencing Creep Behaviour of Hastelloy-X.
JAERI-M-8153 1371

KIVEL, BENNETT
Analysis of Barium Clouds. Volume I.
AD-907 560/7 1294

KLEIN, H. H.
Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415

One-Dimensional Model Calculations of EBT-P Performance.
DOE/ER/53092-T1 1415

KLEIN, JAMES W.
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325

KLEINHENZ, R. L.
Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

KLEIST, DONALD
Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408

User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403

KLOBUCHAR, J. A.
Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
AD-A092 084/3 1293

KNEIZYS, F. X.
Reprint: Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment.
AD-A092 005/8 1440

KNIGHT, P. F.
A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
NUREG/CR-1761 1422

KNOBLOCH, A. F.
Ignition Experiment - Alternatives.
IPP-4/179 1416

KNOTT, ALLEN R.
A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
AD-A092 286/4 1318

KNOX, J. B.
Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

KNUDSEN, J. M.
Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

KNUTSON, PAUL L.
Experimental Dune Restoration and Stabilization, Nauset Beach, Cape Cod, Massachusetts.
AD-A092 110/6 1340

KO, MALCOLM K. W.
Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294

KOBAYASHI, K. L. I.
3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336

KOCH, G.
Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

KOCH, GEORGE
National Dam Safety Program, Browns Reservoir Dam (Inventory Number ID NY-763, DEC Number 232 BE-4361), Long Island Basin, Westchester County, New York. Phase I Inspection Report,
AD-A092 037/1 1380

National Dam Safety Program. Harrower Pond Dam (Inventory Number NY207), Mohawk River Basin, Montgomery County, New York. Phase I Inspection Report,
AD-A092 227/8 1382

National Dam Safety Program. Nanticoke Creek Watershed Project Site 10 Dam (Inventory I.D. Number NY 713, DEC 85D-3946, Susquehanna River Basin, Broome County, New York, Phase I Inspection Report,
AD-A092 036/3 1380

National Dam Safety Program. Patterson, Brixius, Grey Creek Watershed Project, Site 1 (Inventory Number NY698), Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 296/3 1382

National Dam Safety Program. Patterson Brixius Grey Creek Watershed Project, Site 2 (Inventory Number NY 725). Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 452/2 1382

KOCH, R.
Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372

KOCHENDERFER, J. N.
Skyline Harvesting in Appalachia.
PB81-134173 1291

KOCHER, D. C.
External Dosimetry.
DOE/TIC-11273 1327

KOEBERLE, R.
Scattering Theory and 1/N Expansion in the Chiral Gross-Neveu Model.
PUC-tn-08/79 1446

KOENIG, NATHAN H.
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369

KOENIGSMANN, K.
Hadronic Decays of the eta/sub C/.
SLAC-PUB-2594 1446

KOERMER, JAMES PAUL
Dynamic Interactions between the Troposphere and Stratosphere.
AD-A092 420/9 1295

KOHLENSTEIN, LAWRENCE C.
Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay,
PB81-131765 1317

KOILLER, B.
Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

KOLASSA, DAVID A.
Bathymetric Data Reduction System.
AD-A091 942/3 1348

KOLLA, VENKATARATHNAM
Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348

KOLODIN, L.
Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.
AD-892 041/5 1359

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
AD-892 042/3 1359

KONDO, T.
Metallurgical and Environmental Factors Influencing Creep Behaviour of Hastelloy-X.
JAERI-M-8153 1371

Oxidation Kinetics and Spallation of Oxide Film of the Structural Metal in HTR Helium under Thermal Cycles.
JAERI-M-8210 1371

KONKOL, P. J.
Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370

KOONTZ, A. S.
Improvements to the COBRA-TF (EPRI) Computer Code for Steam Generator Analysis. Final Report.
EPRI-NP-1509 1427

KOOTSTRA, A.
Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
CONF-8010108-3 1315

KORSAN, ROBERT J.
Pilot Automated Influence Diagram Decision Aid.
AD-A092 129/6 1308

KORT, JOHN
Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
PB81-139305 1301

KORZEN, M.
MHD Pressure Losses in Pipeline Systems for Toroidal Fusion Reactors.
IPP-4/180 1417

KOSEL, T. H.
Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.

DOE/ET/10460-14 1370

KOSTECKI, JOHN A.
Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348

KOU, S.
Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

KOVACS, AUSTIN
Investigations of Sea Ice Anisotropy, Electromagnetic Properties, Strength, and Under-Ice Current Orientation.
AD-A092 089/2 1349

KOVACS, P.
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

KOWAL, DENNIS M.
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets,
AD-A092 359/9 1324

KOWALSKI, BRUCE R.
UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
AD-A092 213/8 1333

KRAEMER, RONALD E.
Preliminary Outline of Driver Duties and Tasks for US/FRG MBT-70.
AD-A950 103/2 1434

Preliminary Outline of Gunner Duties and Tasks for US/FRG MBT-70.
AD-A950 106/5 1436

Preliminary Outline of Tank Commander Duties and Tasks for US/FRG MBT-70.
AD-A950 108/1 1434

KRAFFT, J. M.
Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
AD-A092 473/8 1370

KRALL, N. A.
Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415

KRAMER, GORDON D.
Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
AD-894 188/2 1438

KRAUSE, D. JR.
Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
DOE/ER/05031-2 1336

KREYENHAGEN, K. N.
Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
AD-B006 844/5 1350

KRIEG, B.
Status of the Nuclear Data Library KEDAK-3. July 1979.
KFK-2386/I 1445

KRILL, JERRY A.
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293

KRISHNAIAH, P. R.
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376

KROLL, NORMAN M.
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

KUEHL, DOUGLAS W.
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322

KULLMAN, RUSSELL M. H.
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332

KUMAR, M.
Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368

KUNORI, S.
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

KUNZE, KLAUS
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319

KURAK, V.
Conformal Invariance in the Quantum Field Theory.
INIS-mf-5640 1444

Scattering Theory and 1/N Expansion in the Chiral Gross-Neveu Model.
PUC-tn-08/79 1446

KUROTORI, I. S.
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 684/2 1433

KUZNETSOVA, V. N.
Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343

KWON, S. Y.
Speech Algorithm Optimization at 16 KBPS.
AD-A092 010/8 1407

LA FOY, ANNE B.
Energy Use in Transportation. Selected References.
AD-A092 157/7 1361

LABAW, KENNETH B.
Laser Safety Computer Program.
AD-B032 525/8 1439

LACEY, A.
Composition of Solidified Binary Alloy from a Simple Solidification Model.
ORNL/CSD-66 1371

LAESSIG, ROBERT E.
Health Planning Related to Environmental Factors. Volume II: Foodborne and Waterborne Intestinal Illnesses Module,
HRP-0902233/6 1319

Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text,
HRP-0902234/4 1320

LAGARDE, Y.
Completion of a Prototype Installation for in-Line Coating by the Pyrosol Process for the Realization of Selective Glazings. Final Report.
EUR-6806-FR 1362

LAIL, G. G.
YJ101-YF-17 Aircraft Prototype Development Summary.
AD-B022 460/0 1455

LANDE, SHELDON S.
Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

LANDES, DAVID
An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
PB81-132334 1321

LANDWEBER, L.
Reprint: Ship Centerplane Source Distribution.
AD-A092 431/6 1392

LANE, R. O.
Study of Structure of Nuclei with Neutrons and Nuclear Data Measurements for MFE. Progress Report, September 1, 1979-August 31, 1980.
DOE/ER/02490-1 1443

LANESE, RICHARD R.
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321

LANG, ROGER H.
Discrete Scattering Approach to Vegetation Modeling.
AD-A092 017/3 1452

LANGDON, ROBERT LAWRENCE
Calculation of the Oxide Growth Rate of 2-1/4 Cr - 1 Mo Steel in Air and the Subsequent Measurement of the Strain Required to Crack the Oxide.
AD-A092 302/9 1370

LANGE, F. F.
Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
AD-A092 253/4 1367

LANGENDORF, RICHARD M.
Ad Hoc Sub-Group Interim Report on National Training Center,
AD-A092 019/9 1303

LANGNER, D.
CMB-8 Material Balance System.
LA-8194-M 1430

LANTZ, T. G.
Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

LARKO, D.
Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362

LARSON, ROBERT
The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
AD-A092 287/2 1318

LASHMORE, D.
Reprint: Thin Zinc Films on Aluminum,
PB81-126203 1368

LASKY, MARC P.
An Investigation of Appendage Drag,
AD-A092 353/2 1392

LATEGOLA, M. T.
Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
AD-A092 268/2 1328

LAURIE, EDWARD J.
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288

LAUTRUP, ROBERT WILLIAM
An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
AD-A092 307/8 1368

LAW, E. L.
Analysis of the Power Spectral Density of Tape Recorder Flutter.
AD-B010 481/0 1399

LAWN, B. R.
Reprint: Effect of Particle Impact Angle on Strength Degradation of Glass.
PB81-121493 1368

Reprint: Strength Degradation of Glass Impacted with Sharp Particles: I, Annealed Surfaces.
PB81-121527 1368

Reprint: Thermal Effects in Sharp-Particle Contact.
PB81-119851 1367

LAWRENCE, J. R.
Reprint: Aragonite from Deep Sea Ultramafic Rocks.
AD-A091 967/0 1342

LAWTER, J. RONALD
Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383

LAWTON, S. A.
Near Infrared Gas Lasers.
AD-B036 761/5 1439

LAZARUS, D. B.
Reprint: Planktonic Microfossils and the Recognition of Ancestors.
AD-A092 508/1 1342

LEACH, J. M.
Development of a Chemical Toxicity Assay for Pulp Mill Effluents.
PB81-126369 1339

LEADBETTER, M. R.
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
AD-A092 163/5 1375

LEAV, I.
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 288/0 1327

LEBEY, J.
Tests on Mechanical Behavior of 304 L Stainless Steel under Constant Stress Associated with Cyclic Strain.
CEA-CONF-4801 1370

LEE, A. JAMES
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
PB81-124687 1320

LEE, ALBERT K.
Blood Gas Analyzer System.
PAT-APPL-6-157 380 1324

LEE, ANDREW G.
P-3 Orion Fuel-Saving Modification Wind Tunnel Study,
AD-A091 906/8 1288

LEE, G. S.
Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

LEE, MARK CHARLES
Fatigue in Graphite/Epoxy Bolted Joints.
AD-A092 362/3 1368

LEE, P. H. Y.
Recent Laser-Plasma Interaction Experiments at the Lawrence Livermore National Laboratory.
UCRL-83794 1419

LEE, W. W.
Anomalous Transport Due to Shear-Alfven Waves.
PPPL-1709 1418

LEE, Y. Y.
Acceleration of Polarized Proton at the AGS.
BNL-28323 1441

LEFEVRE, C.
Quantitative Analysis of Carbon in Plutonium.
CEA-R-5013 1335

LEFFINGWELL, J. W.
Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

LEISER, ANDREW T.
Highway Operation and Plant Damage.
PB81-133159 1387

LEITNAKER, J. M.
Extrapolation to the U-F System from the Mo-F System.
K/ET-594 1337

LEMON, STANLEY M.
Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319

LENG, J.
Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
UCRL-15292 1419

LENSKE, H.
Induced Isospin Mixing in Direct Nuclear Reactions.
Juel-Spez-47 1445

LEO, JOSEPH
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297

LEONARD, B. R. JR.
Preconceptual Design and Assessment of a Tokamak Hybrid Reactor.
PNL-2720 1418

LEONARD, P. A.
AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455

LEONE, P. F.
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
AD-908 244/7 1289

LEONENKO, L. S.
Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343

LEPAGE, G. P.
Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446

Synthesis of Quantum Chromodynamics and Nuclear Physics.
SLAC-PUB-2595 1446

LEPPLA, STEPHEN H.
Reprint: Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine.
AD-A091 900/1 1317

LEVEILLE, J. P.
Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446

LEVIN, JACOB J.
Reprint: Nonlinearly Perturbed Volterra Equations.
AD-A092 495/1 1377

LEVINE, HILLEL B.
Reprint: Ketoconazole in Early and Late Murine Coccidioidomycosis.
AD-A091 921/7 1317

LEVINE, M. M.
PWR Steamline Break Analysis Assuming Concurrent Steam Generator Tube Rupture.
BNL-NUREG-26903 1427

LEVINE, S. Z.
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335

LEVINE, SHELDON H.
Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308

LEVITT, HARRY P.
Army 86 Cost Sensitivity Analysis Verification.
AD-A091 889/6 1401

LEVY, DAVID E.
Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
PAT-APPL-6-195 188 1396

LEVY, MOISES
Characterization of Superconductors by Surface Wave Techniques.
AD-A092 387/0 1450

LEVY, P. F.
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

LEVY, RICHARD A.
Reprint: Clinical Applications of Biofeedback.
AD-A092 429/0 1319

LEWIN, SEYMOUR Z.
Chemical Agent Detection Method and Apparatus.
PATENT-4 225 316 1399

LEWIS, ERIC B.
Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322

LEWIS, J. C.
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318

LEWIS, RICHARD P.
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321

LEWIS, W. M.
In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295

LI, QUN
A 20 Years' Survey of Laser Science and Technology in China. II--Translation.
AD-A092 097/5 1439

LICHTENBERG, D. B.
Theoretical Particle Physics. Progress Report, December 1, 1079-November 30, 1980.
DOE/ER/02009-140 1443

LILLEHOJ, EIVIND B.
Solubilization of Lignocellulosic Materials.
PAT-APPL-6-180 546 1338

LILLIE, THOMAS H.
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326

LILLY, JANICE B.
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400

LIM, JAE S.
Reprint: Image Restoration by Short Space Spectral Subtraction.
AD-A092 298/9 1358

A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358

LIN, J. C.
Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
CONF-801102-1 1427

LIN, LIANG-BEE
A Comparison Study and Software Implementation of NORDA Ocean Models.
AD-A092 424/1 1341

LIN, TE-HUA
Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
AD-A092 118/9 1333

LINBERG, W. R.
Tar Sand Extraction by Steam Stimulation and Steam Drive: Measurement of Physical Properties.
DOE/LETC/TPR-80-1761 1345

LINDGREN, G.
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
AD-A092 163/5 1375

LINDQUIST, ANDERS
State Space Models for Gaussian Stochastic Processes.
AD-A092 388/8 1377

LINDQVIST, SEVEN
Metoder foer Bestaemning av Halkfrekventa Vaegstraeckor (Methods for Detecting Road Sections with High Frequency of Ice Formation),
PB81-128290 1385

LINDQVIST, SVEN
Studier av Halka Pa Vaegar (Studies of Slipperiness on Roads),
PB81-128316 1385

LINEBARGER, J. H.
Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
CONF-801102-1 1427

LINN, J. C.
Magnetic Bubble Research.
AD-B002 919/9 1437

LINSCOTT, B. S.
100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
DOE/NASA/9235-75/3 1362

LINSON, LEWIS M.
Analysis of Barium Clouds. Volume I.
AD-907 560/7 1294

LINSTEDT, K. D.
Treatment of Primary Effluent by Rapid Infiltration.
PB81-129124 1386

LINTERN, GAVAN
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287

LINVILLE, B.
Contracts for Field Projects and Supporting Research on Enhanced Oil Recovery and Improved Drilling Technology.
DOE/BETC-80/3 1344

LINZER, MELVIN
Ultrasonic Materials Characterization.
PB81-124984 1396

LIPPERT, T. E.
Operational Analysis of Open-Cycle MHD. Final Report.
EPRI-AP-1463 1366

LIPTON, RICHARD J.
Software Project Forecasting,
AD-A091 923/3 1353

LITANT, I.
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389

LITTLE, C. A.
Interactive Code for Examining Hypothetical Distributions of Experimental Data.
CONF-8010106-2 1357

LITTLE, J. S.
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

LITTLE, L. J.
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412

LITTLE, WILLIAM H.
A Statistical Study of Monthly Storminess and Sea Surface Temperature Anomalies over the North Pacific Ocean.
AD-A092 134/6 1349

LIU, BEDE
Reprint: An Approach to Programmable CTD Filters Using Coefficients 0, + 1, and -1.
AD-A091 877/1 1358

Reprint: Threshold Effect on Error Probability in QAM Systems.
AD-A092 122/1 1408

LIU, C. T.
Reprint: Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study.
AD-A091 922/5 1317

LIU, HSAIO S.
Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325

LIU, PAUL S.
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338

LIVINGSTON, JAMES M.
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326

LO, JAMES T.
Detection, Estimation, and Control on Group Manifolds.
AD-A092 386/2 1377

LOCKARD, HENRY
Documentation--A Computerized Instructional Resource Management System. The Illinois Series on Educational Application of Computers. No. 26e,
ED-183 200 1306

LOCKE, F. E.
Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

LOCKMAN, ROBERT F.
Personnel Management in the All-Volunteer Force Study.

AD-A092 108/0 1304

LOPEZ, HECTOR

Contrast Resolution Tissue-Equivalent Ultrasound Test Object.
PAT-APPL-6-186 381 1324

LORBERG, MARTIN GUS III.

Human Resource Management in the Navy: The Specialists' Viewpoint.
AD-A092 279/9 1304

LORENZ, R. A.

Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

LORENZO, D.

Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426

LOSMAN, DONALD L.

Economic Sanctions in the 1990's,
AD-A092 201/3 1302

LOTH, J. L.

Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

LOTT, R. W.

STARAN Image Processing.
AD-A091 928/2 1353

LOVRICH, NICHOLAS P.

The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387

LOVRICH, NICHOLAS P. JR.

The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-138141 1387

LOWE, CHARLES H.

Biotic Communities of the Southwest.
PB81-133134 1342

LOWRY, W. E.

Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
UCRL-84153 1425

LOY, E. T.

Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426

LUBARD, STEPHEN C.

Viscous Flow over Arbitrary Geometries at High Angle of Attack,
AD-A091 971/2 1438

LUDWIG, EDMUND D.

High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439

LUESCHER, M.

Area Law as a Consequence of the Loop Wave Equation.
DESY-79/82 1448

LUHMAN, T.

Bend Strain Toierances of a Nb sub 3 Sn Conductor Proposed for Use in the Magnetic Fusion Energy Program.
BNL-28375 1414

LUKENS, SAMUEL C.

Burn-In of Uncased Semiconductors. A Feasibility Study.
AD-A092 076/9 1351

LUMLEY, JOHN L.

Reprint: Some Comments on the Energy Method.
AD-A091 944/9 1438

LUNARDINI, VIRGIL J.

The Neumann Solution Applied to Soil Systems,
AD-A092 244/3 1350

LUNEV, F. A.

Description of Final States and Infrared Divergences in Quantum Electrodynamics.
IFVE-OTF-79-96 1444

LUZZI, T.

Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
UCRL-15292 1419

LYZENGA, DAVID R.

Coastal Remote Sensing Investigations. Volume 1. Marine Environment.
AD-A092 025/6 1348

MA, Z. M.

Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters.
DOE/ER/14529-1 1422

MACCRONE, R. K.

Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
AD-A091 997/7 1450

MACDONALD, P. E.

Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
CONF-800971-2 1427

MACHTA, LESTER

Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1,
AD-B951 736/8 1426

MACHUCA, RAUL G.

Automated Reading of Videotape.
AD-A092 224/5 1355

MACINTOSH, RICHARD A.

Reprint: The Snail Resource of the Eastern Bering Sea and Its Fishery,
PB81-120750 1317

MACKIN, JOSEPH PAUL

Measurement of Pumped Superluminal Electromagnetic Radiation.
AD-A092 306/0 1441

MACKOWSKI, J. M.

Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337

MACLAREN, ROBERT

Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
AD-B040 437/6 1331

MACLEAN, SCOTT

Passenger Transport Innovation in Adelaide: Taxi-Cabs.
PB81-125460 1384

MACLEOD, M. C.

Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
CONF-8010108-3 1315

MACRAE, C. DUNCAN

Metropolitan Housing and the Income Tax,
PB81-139040 1311

Urban Housing with Discrete Structures,
PB81-139057 1311

MADDALA, G. S.

Some Extensions of the Nerlove-Press Model.
AD-A091 946/4 1375

MADDEN, R.

Noise Reduction of Chain Conveyors. Volume I.
PB81-130833 1348

MADILL, HERBERT D.

Reprint: Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance.
AD-A092 048/8 1308

MADLAND, D. G.

Prompt Fission Neutron Spectra and Anti nu p.
LA-UR-80-2707 1423

MAECK, W. J.

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

MAEDA, H.

Disruptive Shift of Magnetic Axis in Non-Circular Tokamaks.
PPPL-1707 1418

MAGER, M.

Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 288/0 1327

MAGNUS, ALFRED E.

PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438

MAHER, J. T.

Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327

MAHIN, STEPHEN A.

Cyclic Inelastic Buckling of Tubular Steel Braces,
PB81-124885 1395

MAHONEY, JOAN M.

A Guidance Document on Airport Noise Control.
AD-A092 228/6 1290

MAILLARD, C.

Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342

MAINKA, E.

Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
DOUNREAY-TRANS-826 1337

MAJOUBE, M.

Raman and I.R. Spectra of the NH and ND Stretching Region in Polycristalline Imidazole, exp 15 N and D Substituted Analogs.
CEA-CONF-4808 1335

MALEN, K.

Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

MALIK, NAVEED A.

A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358

MALINAUSKAS, A. P.

Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

MALLAMAD, SHARYN M.

Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305

MALLINGER, W. D.

In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295

MALLON, PAUL JOSEPH

Validation of a Two-Dimensional Primitive Variable Computer Code for Flow Fields in Jet Engine Test Cells.
AD-A092 138/7 1454

MALLON, R. G.

Preparation of Grout for Stabilization of Abandoned In-situ Oil Shale Retorts.
PAT-APPL-6-101 364 1383

MANGIAFICO, JOSEPH A.

A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
AD-A092 286/4 1318

MANSFELD, FLORIAN

Lifetime Prediction of Organic Coating/Metal System.
AD-A092 382/1 1368

MANSFIELD, EDWIN

Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.
PB81-125387 1300

MANSFIELD, RICHARD J. W.

Predictive Models of Human Visual Processes in Aerosystems.
AD-A092 290/6 1308

MANUSZEWSKI, R. C.

Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372

MARABLE, J. H.

Developments in Sensitivity Theory.
CONF-800942-10 1430

MARCELLINO, FRANK C.

Evaluation of Alternative Interment Methods for National Cemeteries.
PB81-123879 1309

MARCH, M. R.

Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441

MARCUS, LAWRENCE H.

Encapsulation of Electronic Circuits. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855298 1391

Ion Exchange Resins. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855306 1339

MARCUS, STEVEN I.

Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412

MARINOV, M. V.

Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

MARK, J. W. K.

Ballooning Mode Second Stability Region for Sequences of Tokamak Equilibria.
DOE/ET/53073-T1 1416

MARK, P.

Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449

MARKES, M.

Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

MARQUEZ, VICTOR E.

Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.

PAT-APPL-6-115 900 1338

MARTIN, BILLY J.
Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317

MARTIN, FRED W.
Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

MARTIN, H. J.
Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
DOE/ER/02009-139 1443

MARTIN, J.
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

MARTINEZ, DAVID R.
Reprint: A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom.
AD-A091 880/5 1436

Reprint: A Technique for the Evaluation of Circularly Symmetric Two-Dimensional Fourier Transforms and Its Application to the Measurement of Ocean Bottom Reflection Coefficients.
AD-A091 879/7 1436

MARTINSON, Z. R.
Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

MARUYAMA, T.
Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters.
DOE/ER/14529-1 1422

MASCH, DONALD GEORGE
The Iranian Revolution and Its Impact on the Future of Soviet-Iranian Relations: An Assessment.
AD-A092 281/5 1302

MASHBERG, ARTHUR
Toluidine Blue Rinse for the Detection of Squamous Carcinoma of the Oral Cavity and Other Structures Composition and Method.
PAT-APPL-6-105 079 1325

MASHBURN, D. N.
Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391

MASKEWITZ, B. F.
Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
CONF-801011-14 1415

MASON, D. M.
Formulas for Calculating the Heating Value of Coal and Coal Char: Development, Tests, and Uses.
CONF-800814-25 1452

MASSATT, PAUL
Attractivity Properties of alpha-Contractions.
AD-A091 975/3 1375

MASSENGILL, L. A.
ISX-B Neutral Beams and the Beam Target Experiment.
ORNL/TM-7452 1418

MATE, PETER I.
Steering System Survey for Surface Mining Equipment.
PB81-130666 1348

MATHESON, JAMES E.
A Manual for Encoding Probability Distributions.
AD-A092 259/1 1378

Pilot Automated Influence Diagram Decision Aid.
AD-A092 129/6 1308

MATRE, NICK VAN
Computer-Managed Instruction in the Navy. I. Research Background and Status.
AD-A092 481/1 1305

MATSUI, H.
Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424

MATSUYAMA, GAREY T.
A Feasibility Study for Advanced Technology Integration for General Aviation.
AD-A092 437/3 1289

MATTHIS, N. K.
Infrared Measurement Variability Analysis.
AD-A092 068/6 1411

MAVROGENES, G. S.
Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(Rev.1) 1441

MAWARDI, O. K.
Momentum Distribution of Ions in Plasma Beam.
AD-A092 385/4 1447

MAXWELL, C. D.
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

MAY, INGO W.
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435

MAYER, C. P.
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364

Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364

MAYERSOHN, J.
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407

MAYES, RONALD L.
Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395

MAYNARD, RICHARD B.
Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332

MAYO, C. V.
Reprint: Influence of Interdental Contacts on Periodontal Status.
AD-A092 425/8 1319

MAYS, LARRY W.
Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387

MAZUR, J.
Reprint: Configurational Properties of Star-Branched Polymers,
PB81-126195 1339

MCBRIDE, J. B.
Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415

One-Dimensional Model Calculations of EBT-P Performance.
DOE/ER/53092-T1 1415

MCCAFFERTY, D.
Pumping Behavior of Sputter Ion Pumps.
BNL-28292 1441

MCCAIN, JOSEPH D.
Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
PB81-122723 1384

MCCARDELL, R. K.
Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
CONF-800971-2 1427

MCCAULEY, MICHAEL E.
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303

MCCOMAS, CHARLES C.
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368

MCCORMICK, GARTH P.
Convergence Theory for Unconstrained Minimization,
AD-A092 254/2 1376

MCCORMICK, RICHARD F.
Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
PB81-127391 1385

MCCOUBREY, A. O.
Reprint: Units, Physical,
PB81-121824 1396

MCCOY, EARL E.
An ADA Language Model of the AN/SPY-1A Component of the AEGIS Weapon System.
AD-A092 260/9 1412

MCCRACKEN, ROBERT J.
Steering System Survey for Surface Mining Equipment.
PB81-130666 1348

MCCRACKIN, F.
Reprint: Configurational Properties of Star-Branched Polymers,
PB81-126195 1339

MCCULLOCH, R. W.
Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

MCCULLOUGH, B. FRANK
Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384

MCCULLOUGH, J. E.
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379

MCCUTCHAN, D. A.
Operational Analysis of Open-Cycle MHD. Final Report.
EPRI-AP-1463 1366

MCDERMID, J. A.
POSER - A Process Organisation to Simplify Error Recovery.
AD-A092 103/1 1354

MCDEVITT, GERALD R.
Low Frequency Geomagnetic Fluctuations (.04 to 25 Hz) on Land and on the Floor of Monterey Bay.
AD-A092 399/5 1411

MCDONALD, F. N.
Continuous Plutonium Monitor for Nuclear Facility off-Gas Streams.
ENICO-1054 1396

MCDONALD, JACK R.
Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338

MCFARLANE, W. K.
Technique for Adaptive Data Analysis.
COO-3539-13 1422

MCFILLIN, J. F. JR.
An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456

MCGILL, B. L.
Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
CONF-801011-14 1415

MCGRORY, J. B.
Application of the Shell Model to Nuclear Spectroscopy.
DOE/TIC-11287 1444

MCGUIRE, S. C.
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(Dr) 1420

MCHUGH, J. P.
Silicon Web Process Development.
DOE/JPL/954654-80/12 1331

MCINTYRE, A.
Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

MCINTYRE, FRED L.
Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
AD-B004 405/7 1432

MCINTYRE, MICHAEL THOMAS
Homosexuality and the U.S. Military.
AD-A092 179/1 1308

MCKEEVER, DAVID B.
Wood Products Used in Constructing Conservation and Development Projects by the Corps of Engineers in the United States - 1962 and 1978.
AD-A092 023/1 1374

Wood Products Used in Military Construction in the United States - 1962 and 1978.
AD-A092 022/3 1374

MCKELVY, M. J.
Concepts for Utilization of Video Discs in Military Applications.
AD-A092 029/8 1398

MCKENDRICK, J. D.
Revegetation of Alaskan Coal Mine Spoils. Progress Report.
DOE/EV/10256-1 1345

MCKINLEY, M. D.
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T1 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T2 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T3 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T4 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T5 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T6 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T7 1345

MCLAURIN, FREDDIE L. JR.

Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
AD-A092 054/6 1296

MCLEAN, E. A.

Doppler Velocimeter for Laser Accelerated Targets.
NRL-MR-4319 1417

Preheat Studies on Laser Ablatively-Accelerated Foils.
NRL-MR-4356 1417

MCLEROY, KENNETH R.

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321

MCMAHON, C. J. JR.

Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

MCMAHON, J.

Laser Fusion Studies at NRL.
NRL-MR-4350 1417

MCNAMARA, JOHN V.

High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361

MCNEESE, L. E.

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

MCNICOL, LORE A.

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329

MCNIVEN, HUGH D.

General Applicability of a Nonlinear Model of a One Story Steel Frame,
PB81-124877 1395

MCWHORTER, DAVID B.

Reconnaissance Study of Leachate Quality from Raw Mined Oil Shale - Laboratory Columns.
PB81-129017 1386

MEADOR, A. B.

Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
AD-A092 118/9 1333

MEDWIN, HERMAN

Acoustical Deverberator.
PATENT-4 225 954 1407

Surface Acoustic Signal Defader.
PATENT-4 219 888 1437

MEERSCHAERT, MARK

Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408

Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408

User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403

MEHL, C. R.

Operation PLUMBBOB. Project 41.3. Effects of Altitude on Neutron Measurements.
AD-B951 742/6 1421

MEHRABIAN, R.

Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

MEIER, B. W.

Technology Assessment of Wind Energy Conversion Systems.
DOE/EV-0103 1365

MEINDL, J. D.

Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351

MEITNER, PETER L.

Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455

MELANCON, S. M.

Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
PB81-142192 1387

MELEZHIK, V. S.

Calculation of Energy Levels of mu -Mesic Molecules of Hydrogen Isotopes Using a Continuous Analog of the Newton Method and Subspace Iteration Method.
JINR-R-4-12671 1339

MELLINGER, P. J.

Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348

MELLO, ROBERT P.

The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets,
AD-A092 359/9 1324

MELLOR, A. M.

AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455

MELLOR, MALCOLM

Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
AD-A092 365/6 1391

MELTON, C. E.

Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
AD-A092 268/2 1328

MENDEL, JOSEPH J.

SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374

MENDILLO, M.

Proceedings of the Workshop/Symposium on the Preliminary Evaluation of the Ionospheric Disturbances Associated with the HEAO-C Launch, with Applications to the SPS Environmental Assessment.
CONF-7911108- 1294

MENON, M. JAISHANKAR

Design and Analysis of Relational Join Operations of a Database Computer (DBC).
AD-A092 230/2 1355

MERCED, VIRGILIO S.

Application of Numerical Optimization to Drive Shaft Design.
AD-A092 400/1 1391

MERCERET, F. J.

In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295

MERCHANT, DEAN C.

Applied Research in Analytical Photogrammetry.
PB81-127300 1341

MEREDITH, G. R.

Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
AD-A092 333/4 1334

Reprint: On the Jahn-Teller Effect in ReF6.
AD-A092 334/2 1334

Reprint: Raman Spectra of SiF4 and GeF4 Crystals.
AD-A092 332/6 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
AD-A092 336/7 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
AD-A092 337/5 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
AD-A092 338/3 1334

MERKHOFER, MILEY W.

Decision Flexibility in a Learning Environment.
AD-A092 498/5 1309

MERRIGAN, M.

Ceramic Heat Pipe Development. Quarterly Report, April 1, 1980-June 30, 1980.
DOE/TIC-11293 1379

MERRYMAN, H. L.

Qualification Test of the Thiokol TE-M-364-19 Solid-Propellant Rocket Motor (S/N 19006).
AD-B018 629/6 1456

MERSON, T. J.

Technology Assessment of Wind Energy Conversion Systems.
DOE/EV-0103 1365

METAG, V.

New Results on the Spectroscopy and Dynamics of Fission.
DOE/ER/01388-452 1443

METKER , LEROY W.

Physiological and Pharmacological Effects Following Oral Administration of Monopropellants, August 1978-September 1979.
AD-B042 976/1 1328

MEYER , EDWARD G.

Lightweight radar alarm system. Vol. 1.
AD-482 920/6 1413

Lightweight radar alarm system. Vol. 2.
AD-482 913/1 1413

MEYER, R. G.

Research in Monolithic, Signal-Processing Circuits.
AD-A091 902/7 1358

MEYER, R. J.

Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449

MEYER, S. F.

Metallic Coating of Microspheres.
UCRL-84463 1420

Recent Advances in Pt Coating of Microspheres by a Batch Magnetron Sputtering Process.
UCRL-84478 1420

MICHALEK, JOEL E.

Reprint: The Effect of Errors in Diagnosis and Measurement on the Estimation of the Probability of an Event.
AD-A092 430/8 1377

MICHEL-CALENDINI, F. M.

SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
LYCEN-7923 1451

MIDDAUGH, DOUGLAS P.

Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

MIDDLEBROOK, JOHN L.

Reprint: Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine.
AD-A091 900/1 1317

MIGLIORE, P. G.

Effects of Flow Curvature on the Aerodynamics of Darrieus Wind Turbines.
ORO-5135-77/7 1362

MIGOTSKY, E.

Gasdynamic Particle Accelerators - An Optimization,
AD-A092 069/4 1395

MILBURN, R.

Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters.
DOE/ER/14529-1 1422

MILES, JOHN W.

Reprint: Guided Solitary Waves.
AD-A092 047/0 1341

Reprint: The Second Painleve Transcendent: A Nonlinear Airy Function.
AD-A092 052/0 1375

MILIAN, L. W.

Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424

MILLER, C. A.

Low Interfacial Tension and Miscibility Studies for Surfactant Tertiary Oil Recovery Processes. Annual Report, December 1, 1978-November 30, 1979.
DOE/BC/10007-8 1344

MILLER, D. M.

Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

MILLER, D. R.

Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

MILLER, EDWARD J.

Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305

MILLER, JAMES G.

Ad Hoc Sub-Group Interim Report on National Training Center,
AD-A092 019/9 1303

MILLER, LEONARD E.

Multi-Sensor Detection Study.
AD-A091 954/8 1358

MILLER, PAUL E. JR.

On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.

PERSONAL AUTHOR INDEX

PB81-132094 1340

MILLER, R. J.
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300

MILLER, ROBERT L.
A Guidance Document on Airport Noise Control.
AD-A092 228/6 1290

MILLER, TED R.
Insurance Coverage and Payment Policies. Rapid Turnaround Neighborhood Preservation Research. Task Number 3.
PB81-139214 1313

MILLER, THOMAS G.
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439

MILLS, D.
Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

MILLS, GLENN M.
The Enrichment of Smoler's Model of Land Combat.
AD-A092 196/5 1403

MILNE, E. A.
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

MILOH, T.
Reprint: Ship Centerplane Source Distribution.
AD-A092 431/6 1392

MINDEL, IRVING N.
Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396

MINK, ALAN
Computer Science and Technology: An Analytic Study of a Shared Device Among Independent Computing Systems.
PB81-125783 1357

MISRA, D. N.
Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339

MITCHELL, G. A.
Revegetation of Alaskan Coal Mine Spoils. Progress Report.
DOE/EV/10256-1 1345

MITCHELL, JAMES B.
Multifamily Property Utilization Task Force.
PB81-139131 1312

MITCHELL, W. W.
Revegetation of Alaskan Coal Mine Spoils. Progress Report.
DOE/EV/10256-1 1345

MITCHELL, WALTER F.
Navy Tactical Applications Guide. Volume I. Techniques and Applications of Image Analysis,
AD-B024 969/6 1400

MITRA, S. K.
Efficient Design of Two-Dimensional Recursive Digital Filters. Final Report.
UCID-18819 1361

MIYACHI, S.
Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

MIZUNO, E.
Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
PB81-120065 1350

MOFFAT, R. B.
Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347

MOHER, CARL L.
Lightweight radar alarm system. Vol. 1.
AD-482 920/6 1413

Lightweight radar alarm system. Vol. 2.
AD-482 913/1 1413

MOIR, R. W.
Technology of Direct Conversion for Mirror Reactor End-Loss Plasma.
UCRL-84235 1419

MOLLOY, K. C.
Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

MOLTZ, D. M.
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420

Helium-Jet Coupled Mass Separator: Advances and Directions.
CONF-800870-1 1420

MOLYNEAUX, M. S.
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

MONDKAR, DIGAMBAR P.
3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program,
PB81-123242 1449

MONIZ, E. J.
Delta -Nucleus Interactions. CTP No. 887.
CONF-800863-3 1443

MONROE, R.
Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329

MONSEN, PETER
Adaptive Antenna Control (AAC) Program.
AD-A092 030/6 1407

MONTAN, D. N.
Effects of Dimensionality and Boundary Conditions on Thermal Calculations.
UCID-18681 1425

MONTEMERLO, MELVIN D.
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305

MOORE, J. G.
Reprint: Airborne Studies of Equatorial F Layer Ionospheric Irregularities.
AD-A092 006/6 1293

MOORE, M. S.
Intermediate Structure in Unresolved Resonances of Fissile and Fertile Nuclides.
LA-UR-80-2675 1445

Systematics of S- and P-Wave Radiation Widths.
LA-UR-80-2702 1423

MOORE, RALPH G.
NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
AD-A091 939/9 1421

MOORHEAD, A. J.
Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

MORAN, K. P.
Reprint: Long-Term Measurements in C2n in the Boundary Layer.
AD-A092 427/4 1295

Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295

MORAN, KENNETH P.
Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295

MORCOS, N.
Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424

MOREAU, D.
Comments on Various Derivative Methods of the Parametric Dispersion Relations.
EUR-CEA-FC-1014 1448

MOREY, REXFORD M.
Investigations of Sea Ice Anisotropy, Electromagnetic Properties, Strength, and Under-Ice Current Orientation,
AD-A092 089/2 1349

MORGAN, TERRI
California's Salmon Resource - Its Biology, Use and Management.
PB81-134041 1340

MORGENTHALER, DAVID G.
Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354

MORIN, T. J.
Infrared Measurement Variability Analysis.
AD-A092 068/6 1411

MORINAGA, W. S.
Advanced Ship System Concepts for Hydrographic Surveying.
AD-A092 374/8 1392

MORLEY, LLOYD A.
Interactive Mine-Power-System Analysis--APL Fault Program.
PB81-130858 1348

MORRIS, M. E.
Design and Operation of the Sandia Pilot Plant.
SAND-80-1954C 1388

MORTON, PHILIP
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

MOSHER, A.
Quantum Chromodynamics.
SLAC-224 1447

MOSHER, D.
Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414

NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

MOSLEY, RONALD B.
Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338

MOSSBERG, T. W.
Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335

MOSTYN, BARBARA J.
A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385

MOTES, B. G.
Continuous Plutonium Monitor for Nuclear Facility off-Gas Streams.
ENICO-1054 1396

MOTLEY, R. W.
Mode Converter for Electron Cyclotron Resonance Heating of Toroidal Plasmas.
PPPL-1697 1418

MOZZI, R.
Power FET Contact Technology.
AD-A092 320/1 1351

MUELLER, RALPH S.
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
AD-912 789/5 1360

MUELLER, T. J.
Reprint: Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body.
AD-A092 494/4 1438

MUENSTER, G.
Characterization of the Higgs Phase in Lattice Gauge Theories.
DESY-79/72 1443

MUI, J. Y. P.
Low-Cost Solar Array Project. Task I. Silicon Material. Investigation of the Hydrogenation of SiCl sub 4.
DOE/JPL/955382-79/6 1365

MUIZNIEKS, VIKTORS
Getting Started in School Computing: Preparing to Purchase. The Illinois Series on Educational Application of Computers, No. 14e,
ED-183 192 1306

MULLINS, C. S.
Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

MULLINS, F. P.
Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

MURAD, EDMOND
Reprint: The Dissociation Energies of Gaseous Praseodymium- and Neodymium-Monoxides and Their Structure.
AD-A092 488/6 1334

MURADYAN, R. M.
Discrete Subgroups of the Three-Dimensional Rotation Group.
JINR-R-5-12459 1449

MURAOKA, S.
Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

MURDOCK, T. L.
Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

MURPHY, CHARLES H.
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
AD-A092 375/5 1432

MURPHY, D. W.
Advanced Ship System Concepts for Hydrographic Surveying.
AD-A092 374/8 1392

MURPHY, JANE GRISELL
Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
PB81-133365 1307

MURPHY, M. F.
Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441

MURTHA, D. M.
Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment,
PB81-139313 1313

MURTHA, D. MICHAEL
Workshop on Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment. Workshop Framework and Paper Subjects,
PB81-139321 1313

MYERS, CHARLES E.
N-Acetyl-Cysteine Protects Against Cardiac Damage from Subsequently-Administered Cardio-Toxic Anthracycline in Cancer Therapy.
PAT-APPL-6-190 064 1326

MYKLEBUST, R. L.
Reprint: Calculations of Electron Beam Spreading in Composite Thin Foil Targets,
PB81-126070 1338

NACCI, VITO A.
Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385

NAGANO, K.
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

NAGASUBRAMANIAN, G.
On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333

NAGLE-ESHLEMAN, JUDITH
The Shock and Vibration Digest. Volume 12, Number 11,
AD-A092 384/7 1449

NAKAHARA, Y.
Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420

NAKAJIMA, H.
Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454

NAKAJIMA, Y.
Investigation on the Damage Threshold of Films Coated on Various Silicate, Fluorophosphate and Phosphate Laser Glasses. Final Report, January 1, 1979-August 29, 1980.
DOE/DP/40096-1 1440

NANEVICZ, JOSEPH E.
Titan Vehicle Electrostatic Environment.
AD-913 898/3 1457

NARCISI, R.
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

NARDI, V.
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447

NARITOMI, M.
Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424

NASH, A. E.
Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

NASH, KENT D.
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321

NATHAN, STEVEN F.
Effect of Response Mode on Target Identification.
AD-A092 381/3 1412

NAZAROFF, W. W.
Residential Radon Daughter Monitor Based on alpha Spectroscopy.
LBL-10768 1422

NE'EMAN, Y.
Color in Internal Supersymmetry Unification.
DOE/ER/03992-414 1444

Geometric Ghosts and Unitarity.
DOE/ER/03992-413 1444

Sequential Internal Supersymmetry.
DOE/ER/03992-412 1444

Soft-Group-Manifold Structure of Supergravity, and the Proof of Unitarity.
DOE/ER/03992-417 1448

Unification Through a Supergroup.
DOE/ER/03992-422 1444

NEBGEN, JOHN W.
Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385

NEFFEW, J. R.
Coso Monitoring Program.
AD-A092 417/5 1343

NEIKIRK, RAYMOND O.
Data Link, Helicopter Supported Radar.
AD-885 551/2 1413

NELSON, ALLAN C.
A New Computer Program for Plant Layout Design - OPDEP Optimal Plant Design and Evaluation Program.
AD-A092 363/1 1390

NELSON, IVAN
Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
PB81-122533 1393

NELSON, MICHAEL A.
Reprint: Suprathreshold Processing of Complex Visual Stimuli: Evidence for Linearity in Contrast Perception.
AD-A092 008/2 1326

NELSON, R. A. JR.
Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
CONF-801102-1 1427

NELSON, R. C.
Reprint: Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body.
AD-A092 494/4 1438

NEMOTO, T.
Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

NETZER, D. W.
An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456

NEUFELD, HAROLD A.
Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

NEUWORTH, M. B.
Two Stage Liquefaction of Coal.
PAT-APPL-6-124 057 1331

NEVIN, ROBERT L.
Radar Sensitivity Time Control Using Range Gated Feedback.
PATENT-4 228 435 1413

NEWBURY, D. E.
Reprint: Calculations of Electron Beam Spreading in Composite Thin Foil Targets,
PB81-126070 1338

NEWBY, B. J.
Calcination of Sodium-Bearing Waste Using Non-Radioactive Additives.
ENICO-1043 1424

NEWMAN, J. STEVEN
The Need for Airport Noise Monitoring Systems. Their Uses, and Value in Promoting Civil Aviation.
AD-A092 240/1 1290

NEWMAN, L.
Atmospheric Oxidation of Sulfur Dioxide as Viewed from Power Plant and Smelter Plume Studies.
BNL-28347 1335

NEWMAN, OSCAR
Factors Influencing Crime and Instability in Urban Housing Developments,
PB81-128670 1309

NEWNHAM, ROBERT E.
Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353

NGUYEN, D. H.
Failure Analysis of Carbide Fuels under Transient Overpower (TOP) Conditions.
HEDL-SA-2006-FP 1429

NICHOLAS, KENNETH M.
Carbon Dioxide Activation; Formation of trans- (Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

NICKELS, F. J.
Inflatable Liferaft Stability Study.
AD-A091 986/0 1323

NICKELS, J. S.
Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316

NICOLAIDIS, A.
Simple Parametrization of the Structure Functions of the Photon.
LPC-79-16 1446

NIEHAUS, R. J.
EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300

NIESER, MARY JO
Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325

NIEVA, VERONICA F.
Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305

NIGHAN, WILLIAM L.
Investigation of Plasma Processes in Electronic Transition Lasers.
AD-A091 903/5 1439

NIKOOYEH, H.
Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429

NILRAT, FUKIJ
Hydrodynamic Pressure and Added Mass for Axisymmetric Bodies,
PB81-122343 1438

NILSSON, A.
Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
PB81-128753 1389

NITZBERG, RAMON
Signal Processor for IR Sensors.
AD-B030 997/1 1411

NIX, GERALD DWAYNE
Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
AD-A092 469/6 1396

NOLAN, P. J.
MOD-2 Wind Turbine Farm Stability Study.
DOE/NASA/0134-1 1365

NOPONEN, ILKKA T.
Relationship between Ms and mb for Small Earthquakes in Uzbekistan, USSR.
AD-A091 984/5 1349

NORLEY, K. T.
Light Rail Application and Design,
PB81-124620 1384

NORMAN, DONALD A.
Analogical Processes in Learning.
AD-A092 233/6 1308

Errors in Human Performance.
AD-A091 925/8 1308

NORMAN, JOHN C.
Development and Evaluation of a Long-Term Low Profile Intracorporeal (Abdominal) Left Ventricular Assist Device (THI E-Type ALVAD) Fascicle I.
PB81-131773 1324

NORRIS, A. E.
Fission Product Release. Progress Report, April 1-June 30, 1980.
LA-8539-PR 1424

NORTON, F. J.
Interactive Graphics, the Design Process, and Education.
UCRL-52916 1357

NORVELLE, D. F.
Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
AD-A092 289/8 1373

O'BRIAN, M. E.
Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452

O'BRIEN, EUGENE
National Dam Safety Program. Beaver Dam Lake (Inventory Number N.Y. 619), Hudson River Basin, Orange County, New York. Phase I Inspection Report,
AD-A092 225/2 1382

National Dam Safety Program. Garnerville Dam (Inventory Number N.Y. 744), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,

AD-A092 042/1 1381

National Dam Safety Program. Harlem Valley Reservoir (Inventory Number N.Y. 273), Housatonic River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 040/5 1381

National Dam Safety Program. Lake Suzanne (Inventory Number N.Y. 760) Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 220/3 1382

National Dam Safety Program. Morgan Lake Dam (Inventory Number NY-787), Hudson River Basin, Dutchess County, New York. Phase I Inspection Reprot,
AD-A092 039/7 1381

National Dam Safety Program. Mt. Beacon Reservoir (Inventory Number NY-26), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 038/9 1381

National Dam Safety Program. Tivoli Lake Dam (Inventory Number N.Y. 52), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 219/5 1381

National Dam Safety Program. Wappingers Falls Dam (I.D. Number N.Y. 3, D.E.C. 613A), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 170/0 1381

O'BRIEN, PAUL A.

An Application of Kalman Filtering to Torpedo Tracking.
AD-A092 303/7 1407

O'CONNELL, L.

STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421

O'DAY, JAMES

Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394

O'DELL, ALLEN

Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332

O'DONNELL, JAMES ROBERT

A General Retention Model Applied to the Naval Aviator.
AD-A092 308/6 1305

O'DONNELL, PEGGY

Planning Library Programs,
ED-183 163 1298

O'KEEFE, GARY ALAN

A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
PB81-140683 1387

O'MALLEY, ROBERT E. JR.

Analytic Methods for the Approximate Solution of Singularly Perturbed Systems.
AD-A091 907/6 1375

O'NEAL, RUSSELL D.

Ad Hoc Sub-Group Interim Report on National Training Center,
AD-A092 019/9 1303

O'ROURKE, J. E.

Preliminary Geochemical and Physical Testing of Materials for Plugging of Man-Made Accesses to a Repository in Basalt.
RHO-BWI-C-66 1425

OBENSCHAIN, S. P.

Doppler Velocimeter for Laser Accelerated Targets.
NRL-MR-4319 1417

OCHSENFELD, W.

Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

ODEGAARD, T. K.

Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429

ODOM, T. R.

License Application for Type 48HX Cylinder for Shipment of Natural Assay UF sub 6.
KY-697 1422

OFFER, H. P.

Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429

OGUSHWITZ, HOWARD L.

Computer Simulation of Aircraft. July, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855058 1290

Sailplanes. January, 1970-July, 1980 (Citations from the Engineering Index Data Base).
PB81-850604 1290

Sailplanes. January, 1970-March, 1980 (Citations from the NTIS Data Base).
PB81-850612 1290

Sailplanes. January, 1972-March, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850596 1290

Stepper Motors. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855132 1358

Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855082 1393

Varistors. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855108 1353

Varistors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855090 1353

Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855066 1294

Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294

OH, C. B.

A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
NUREG/CR-1761 1422

OHATA, T.

Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424

OHLEF, HENRY L.

AS-11/B Stereoplotter Experiments and Studies.
AD-900 360/9 1341

OHLSSON, E.

Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
PB81-128753 1389

Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300

OISHI, JOHN S.

Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
AD-A092 285/6 1325

OJALVO, I.

Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
UCRL-15292 1419

OKABAYASHI, M.

Analytical Study of the External Field for Non-Circular Tokamak with Multipole Moment Expansion Approach.
PPPL-1718 1418

Disruptive Shift of Magnetic Axis in Non-Circular Tokamaks.
PPPL-1707 1418

OKADA, O.

Analytical Study of the External Field for Non-Circular Tokamak with Multipole Moment Expansion Approach.
PPPL-1718 1418

OKAZAKI, S.

Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420

OKUDA, H.

Anomalous Transport Due to Shear-Alfven Waves.
PPPL-1709 1418

OLIVER, D. A.

A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

ONO, KANJI

The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
AD-A092 247/6 1369

ONSGARD, HENRY

Region V's Guidance for Developing a State Malfunction Notification and Correction Program,
PB81-125601 1384

OPITTEK, E. W.

Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
AD-B004 191/3 1290

OPPENHEIM, ALAN V.

Reprint: A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom.
AD-A091 880/5 1436

Reprint: A Technique for the Evaluation of Circularly Symmetric Two-Dimensional Fourier Transforms and Its Application to the Measurement of Ocean Bottom Reflection Coefficients.
AD-A091 879/7 1436

ORAN, ELAINE S.

Detailed Modelling of Combustion Systems.
AD-A092 234/4 1452

ORENS, J.

Laser Fusion Studies at NRL.
NRL-MR-4350 1417

ORR, M. H.

Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407

OSBORN, WILLIAM C.

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section I. Automotive Maintenance.
AD-A950 104/0 1434

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section II. Turret Maintenance.
AD-A950 105/7 1434

OSBORNE, M. F.

Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

OSIF, TERRY L.

Gas Saturation in Formation Waters.
PB81-130759 1343

OSTERYOUNG, JANET

Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332

OSTERYOUNG, R. A.

Review of Thermally Regenerative Electrochemical Systems. Volume I. Synopsis and Executive Summary.
SERI/TR-332-416(V.1) 1366

OTTE, L. J.

First Technical Contractors' Conference on Peat. Final Report.
DOE/ET/10159-T3 1342

Peat Resources of North Carolina. Quarterly Progress Report.
DOE/ET/10159-T1 1342

OTTO, C. H. JR.

Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

OTTO, ROBERT G.

On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
PB81-132094 1340

OTTOSEN, N. S.

Nonlinear Kinematic Hardening under Non-Proportional Loading.
RISO-R-408 1372

OWEN, BENJAMIN P.

Check Test of Launcher, Grenade, 40mm, M203, under Arctic Winter Conditions.
AD-B004 403/2 1436

OWEN, D. E.

Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

OWEN, L. W.

Configurational Analysis of an EBT Reactor in Various Magnetic Geometries.
CONF-801011-10 1414

OWEN, THOMAS E.

Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437

OWENS, LAWRENCE L.

Steering System Survey for Surface Mining Equipment.
PB81-130866 1348

OWENS, T. L.

Lower Hybrid Heating Associated with Mode Conversion on the Wisconsin Toroidal Octupole.
DOE/ET/53051-10 1447

OWENS, W. BRECHNER

Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342

OWNBY, MARGARET

A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
ED-183 169 1298

OXLEY, J.

Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381

OYAMA, NOBORU

Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373

OZDEMIR, LEVENT

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.

AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380

OZKAN, H.

Effect of Thermal Neutron Irradiation on the Elastic Moduli and Structure of Boron-Containing Crystals. Final Report for the Period 1 October 1976-30 September 1979.
IAEA-R-1800-F 1450

PAARMANN, LARRY D.

Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396

PACE, JUDITH G.

Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

PACE, PAUL

Reprint: Frequency-Stabilized Hybrid CO Laser.
AD-A092 053/8 1439

PACER, J. C.

Principles and Characteristics of Surface Radon and Helium Techniques Used in Uranium Exploration.
GJBX-177(80) 1346

PACHECO, D. P.

Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433

PAIGE, B. E.

Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423

PALANIYANDI, RAVINDRAN

Highway Operation and Plant Damage.
PB81-133159 1387

PANAYAPPAN, R.

A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373

PANDOLF, KENT B.

Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327

Sex Differences in Acclimation to a Hot-Dry Environment,
AD-A092 360/7 1327

PANOFSKY, H. A.

Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362

PAREKH, P. C.

Modulator Driver Transistor.
AD-917 847/6 1352

PARIS, DORIS F.

Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324

PARK, DONN L.

Reprint: Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
PB81-120701 1340

PARKER, B. G.

Preparation and Properties of an Internal Mold Release for Rigid Urethane Foam.
BDX-613-2510 1373

PARKER, JAMES F. JR.

Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323

PARKHURST, M. A.

Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348

PARKINSON, T. E.

The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
PB81-120172 1388

PARRY, R. F.

Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420

PARSONS, JACK L.

Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331

PARSONS, WILLIAM B.

Schools of Public Health Trends in Graduate Education,
HRP-0902582/6 1306

PARTS, L.

Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

PASAHOW, E. W.

Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452

PASQUINI, E.

Quasiconfigurations: An Approach to Effective Forces.
CRN-PN-78-26 1443

PATE, MARIE-ELISABETH

Risk and Public Policy.
PB81-120057 1394

PATNAIK, P. C.

Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
DOE/ET/20280-3 1365

PATON, A.

Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

PATTENDEN, N. J.

Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

PAUL, JACK L.

Highway Operation and Plant Damage.
PB81-133159 1387

PAULSEN, D. E.

Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

PAVLIDIS, D.

New Passivation Methods of GaAs.
AD-A092 354/0 1450

PAYATAKES, A. C.

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, December 1, 1979-February 29, 1980.
DOE/BC/10083-7 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1980-August 31, 1980.
DOE/BC/10083-9 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, March 1980-May 31, 1980.
DOE/BC/10083-8 1344

Basic Studies in the Recovery of Residual Oli by Chemical Flooding. Quarterly Report, June 1, 1979-August 31, 1979.
DOE/BC/10083-1 1344

PEARCE, G. STUART

Development of a High Resolution Kinescope Recorder.
AD-922 009/6 1352

PEARLMAN, J. S.

Reprint: Evaluation of High Efficiency CsI and CuI Photocathodes for Soft X-Ray Diagnostic.
PB81-121006 1353

PECK, GARY L.

Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 594 1325

PEDEN, IRENE C.

Ad Hoc Sub-Group Interim Report on National Training Center,
AD-A092 019/9 1303

PEDERSON, D. O.

Research in Monolithic, Signal-Processing Circuits.
AD-A091 902/7 1358

PEDRAM, E.

Sorption of H sub 2 S on Spent Shale in Packed Beds.
DOE/LC/10020-T4 1454

PELLAT, R.

Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
EUR-CEA-FC-1013 1416

PENDERGAST, M. M.

Computer Code to Assess Accidental Pollutant Releases.
DP-1552 1426

PENNELL, J. H.

YJ101-YF-17 Aircraft Prototype Development Summary.
AD-B022 460/0 1455

PENSE, ROBERTA B.

Examination of Farmer-Reported Acreages.
PB81-130874 1291

PEPPER, D. W.

Calculation of Particulate Dispersion in a Design-Basis Tornadic Storm from the Atomics International Nuclear Material Development Facility, Santa Susana, California.
DP-1566 1426

PERNECZKY, L.

HOTRAN-3 Program for Reactor Core Thermohydraulic Studies in the Three-Channel Approximation.
KFKI-1979-26 1428

PERRY, JERRY L.

Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
AD-923 272/9 1358

PERTOSA, P.

SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
LYCEN-7923 1451

PETERLIN, A.

Reprint: The Lowest Laser-Raman Active Accordion (ALR) Type Oscillations in Crystalline Polymers,
PB81-126187 1339

PETERS, DONALD D.

Evaluation of a New Thermoplastic Gutta Percha Obturation Technique Using 45Ca.
AD-A092 391/2 1319

A Technique for Staining Extracted Teeth: A Research and Teaching Aid for Bleaching.
AD-A092 358/1 1319

PETERS, EDWARD T.

Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383

PETERS, J. E.

AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455

PETERS, MICHAEL

Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324

PETERSEN, STEPHEN R.

A 'Reference Building' Approach to Building Energy Performance Standards for Single-Family Residences.
PB81-135642 1380

PETERSON, KENNETH ALLEN

Improvement in Tropical Cyclone Forecasts by Multiple Linear Regression Equation Adjustment of Analog Tracks.
AD-A092 139/5 1294

PETRONE, JOHN

Manufacturing Methods and Technology Program Plan, CY 1980.
AD-A092 243/5 1390

PETTIGREW, KAREN D.

1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

PETTITT, A. N.

A Non-Parametric Approach to the Change-Point Problem,
PB81-132854 1377

PFALTZGRAFF, ROBERT L. JR.

U.S. Maritime Interests in the South Atlantic. Appendix I.
AD-B025 005/0 1302

U. S. Maritime Interests in the South Atlantic. Appendix II.
AD-B025 006/8 1302

PHILLIPS, G. T.

Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
DOE/ET/20280-3 1365

PICCI, GIORGIO

State Space Models for Gaussian Stochastic Processes.
AD-A092 388/8 1377

PICKERING, H. W.

Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

PICKERING, JOHN

Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study,
PB81-138968 1310

PICKERING, Q. H.

Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329

PERSONAL AUTHOR INDEX

PICKLESIMER, LEWELLYN G.
Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369

PIDCOE, W. W.
Basin Development and Water Allocation,
PB81-127276 1343

PIERCE, C. B.
Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

PIERCE, JOHN C.
The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387

The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-138141 1387

PIERCE, LOUIS C.
Preliminary Outline of Driver Duties and Tasks for US/FRG MBT-70.
AD-A950 103/2 1434

PIERCE, LOUIS C. JR.
Preliminary Outline of Crew Duties and Tasks for Operation of the M60A1E1/E2.
AD-A950 107/3 1434

PIJOLAT, C.
Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337

PITCHER, GERALD K.
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part I. Thermodynamic Design and Study of Life-Limiting Components.
AD-891 461/6 1457

Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
AD-902 944/8 1379

PITHA, JOSEF
Water Soluble Forms of Retinoids.
PAT-APPL-6-170 570 1332

PITTS, J. H.
Consistent HYLIFE Wall Design That Withstands Transient Loading Conditions.
UCRL-84271 1419

PLESSAS, DEMETRIUS
Estimation of Spatial Demand for Hospital Services.
PB81-135790 1322

PLODINEC, M. J.
Effects of Processing Variables on the Product Quality of Large-Scale Glass Forms Containing Simulated SRP Waste.
DP-MS-80-50 1423

PLUMMER, J. D.
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351

POCALUJKA, L. P.
Meteological and Air Quality Data, Quarterly Report. WIPP Site: Eddy County, New Mexico. Autumn Quarter, September 1977-November 1977.
SAND-80-7121 1425

POCOCK, W. E.
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352

PODNEY, WALTER
Submarine Communication at ULF Frequencies. I. A Program of Investigation.
AD-910 973/7 1409

POLLNAC, RICHARD B.
Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica,
PB81-125775 1291

POON, CALVIN P. C.
UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385

POOR, H. VINCENT
Reprint: Memoryless Quantizer-Detectors for Constant Signals in m-Dependent Noise.
AD-A092 123/9 1358

POPE, R. L.
Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433

Results from Trials of a New Yawsonde Design.
PB81-120222 1434

POPLI, RAKESH K.
Molecular Fraction Behavior in Oriented Polymers.
AD-A092 241/9 1373

POPOV, EGOR P.
Cyclic Inelastic Buckling of Tubular Steel Braces,
PB81-124885 1395

POREMBA, B. E.
Radioactive Liquid Waste Discharged to Ground in the 200 Areas During 1977.
RHO-CD-34-4Q 1425

PORTER, CRAIG S.
Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
PB81-124000 1384

PORTER, F. C.
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446

PORTER, KATHY
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326

PORTER, L. F.
Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370

PORTER, ROBERT L.
Type II Forward Storage Site Facilities. POMCUS System. Volume 1.
AD-A092 310/2 1401

POSER, C. I.
Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts,
PB81-126161 1338

POST, R. S.
High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

POSTEL, HAROLD
Distance Measuring Equipment Traffic-Loading Capacity Investigation.
AD-A091 977/9 1412

POSTMA, H.
Engineering Test Facility (ETF) At Oak Ridge National Laboratory (ORNL).
DOE/TIC-11282 1416

Magnetic Fusion Experiments at Oak Ridge National Laboratory (ORNL).
DOE/TIC-11281 1416

POTI, N.
Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454

POUCH, J. J.
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

POVES, A.
Quasiconfigurations: An Approach to Effective Forces.
CRN-PN-78-26 1443

POWANDA, M. C.
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

POWELL, ELBERT A.
Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
PB81-122962 1320

POWELL, GRAHAM H.
3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program,
PB81-123242 1449

POWELL, J. R.
Proceedings of Brookhaven National Laboratory's Fusion/Synfuel Workshop.
BNL-51188 1414

POWELL, JOHN D.
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395

POWERS, S.
Analysis of Barium Clouds. Volume I.
AD-907 560/7 1294

POWLES, H.
Reprint: Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
PB81-120768 1317

PRAGER, S. C.
High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

PRATT, JOHN H.
Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304

PREDEBON, W. W.
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435

PRESCOTT, C. Y.
Parity Violation in Polarized Electron Scattering.
SLAC-PUB-2619 1447

PRESSMAN, A.
Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978,
AD-A092 043/9 1454

PREVENSLIK, T. V.
Structural Evaluation of a DTHR Bundle Divertor Particle Collector.
WFPS-TME-78-100 1420

PRICE, S. D.
Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

PRIOR, W.
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447

PRITCHARD, P. H.
Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

PROPHET, WALLACE W.
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305

PROTHERO, D. R.
Reprint: Planktonic Microfossils and the Recognition of Ancestors.
AD-A092 508/1 1342

PUDENSI, M. A. A.
Laser Modes as an Eigenfunction of an Operator Equation.
INIS-mf-5653 1440

PUGH, E. N.
Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
AD-A092 186/6 1369

PURCELL, J. R.
Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
GA-A-16013 1416

PURDOM, P. W.
Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text,
HRP-0902234/4 1320

RAABE, ROBERT
Highway Operation and Plant Damage.
PB81-133159 1387

RABE, DOUGLAS C.
Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454

RAIFORD, G. B.
SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
ORNL/CSD-53 1428

RAMAMOORTHY, C. V.
Network Management Research.
AD-A092 055/3 1407

RANDOLPH, PHILIP L.
Gas Saturation in Formation Waters.
PB81-130759 1343

RAO, C.
Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.
DOE/ET/10460-14 1370

RAPEANU, S.
Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

RAPPAPORT, JEFFREY
Insurance Coverage and Payment Policies. Rapid Turnaround Neighborhood Preservation Research. Task Number 3.
PB81-139214 1313

RASMUSSEN, D. E.
Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347

RASTOGI, R. G.
Reprint: Seasonal and Solar Cycle Variations of Equatorial Spread-F in the American Zone.
AD-A092 083/5 1293

RATERMANN, ANDREW
Facile Cleavage of the Mo≡ Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

RAVOIRE, J.
Isotopic Exchange Reactions. Kinetics and Efficiency of the Reactors Using Them in Isotopic Separation.
CEA-R-5000 1420

RAYMER, GLYNN
RF-4C Digital Signal Transfer Unit Multisensor Display System (DSTUMDS).
AD-B010 501/5 1435

RAYMOND, K. N.
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332

READ, PATSY
Planning Library Programs,
ED-183 163 1298

REDFIELD, D.
Photovoltaic Mechanisms in Polycrystalline Thin-Film Silicon Solar Cells. Quarterly Report No. 4, May 1-July 31, 1980.
DOE/ET/23108-5 1365

REED, D. A.
Analysis of the New GCFR Upper and Lower Plenum Flow-Through Shields.
CONF-800942-4 1422

REED, R. E.
Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
AD-A092 078/5 1351

Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351

REED, R. K.
Reprint: Recent Observations of a Large Eddy in the Gulf of Alaska,
PB81-120719 1342

REED, R. W.
Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

REEVER, KENNETH P.
Connector-to-Connector Adaptor.
PATENT-4 218 110 1352

REFOJO, MIGUEL F.
Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325

REID, R. L.
ETF System Code: Composition and Applications.
CONF-801011-5 1415

REID, WILLIAM H.
Wood Products Used in Constructing Conservation and Development Projects by the Corps of Engineers in the United States - 1962 and 1978.
AD-A092 023/1 1374

Wood Products Used in Military Construction in the United States - 1962 and 1978.
AD-A092 022/3 1374

REIDER, J. P.
Environmental Assessment Data Systems User Guide: Project Profile System.
PB81-125825 1299

REINIGER, ROBERT F.
Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341

REISS, EDWARD L.
Propagation, Scattering, and Reflection of Waves in Continuous and Random Inhomogeneous Media, and Nonlinear Boundary Value Problems.
AD-A092 062/9 1436

REMMERS, KENNETH D.
Dynamic Hull and Propeller Interaction Factors for FF-1052 Predicted from Quasi-Steady Model Experiments.
AD-A091 890/4 1392

RENIER, JAMES J.
Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

REUSCH, M.
Disruptive Shift of Magnetic Axis in Non-Circular Tokamaks.
PPPL-1707 1418

REUTLINGER, RICHARD A.
Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325

RHODES, D. W.
Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423

RHODESIDE, DEANA D.
Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment,
PB81-139313 1313

Workshop on Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment. Workshop Framework and Paper Subjects,
PB81-139321 1313

RIBE, F. L.
Experimental Program Based on a High Beta Q Machine. Final Report, 1 May 1978-30 September 1980.
DOE/ET/53081-1 1448

RICE, JOHN R.
A Population of Linear, Second Order, Elliptic Partial Differential Equations on Rectangular Domains. Part 1.
AD-A092 248/4 1376

RICH, F. J.
Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 878/9 1292

RICHARD, VICTOR W.
Millimeter Wave Radar Applications to Weapons Systems.
AD-B012 103/8 1413

RICHARDS, ROBERTA L.
Reprint: Immune Reactivities of Antibodies against Glycolipids.
AD-A092 002/5 1317

Reprint: Influence of Temperature on Complement-Dependent Immune Damage to Lipsomes.
AD-A092 087/6 1318

RICHARDSON, MARY JOSEPHINE
Composition and Characteristics of Particles in the Ocean: Evidence for Present Day Resuspension.
AD-A092 231/0 1349

RICHARDSON, P. L.
Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342

RICHARDSON, PHILIP L.
Reprint: Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
AD-A092 001/7 1340

RILEY, J. PAUL
Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344

RILEY, R. G.
Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies,
NUREG/CR-1299 1337

RIMSHAW, S. J.
Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
CONF-801038-4 1423

RING, P. J.
Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429

RIPPER, J. E.
Laser Modes as an Eigenfunction of an Operator Equation.
INIS-mf-5653 1440

RISTLAID, HEINO
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

RITTERMAN, P. F.
Advanced Aluminum-Chlorine Battery for Expendable ECM Devices.
AD-B004 957/7 1366

RIVELL, RICHARD A.
Interactive Mine-Power-System Analysis--APL Fault Program.
PB81-130858 1348

RIVET, M. F.
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442

RIVIER, N.
Magnetic Excitations in Amorphous Ferromagnets.
INIS-mf-5654 1451

ROBECK, K. E.
Threatened and Endangered Fish and Wildlife of the Midwest.
ANL/EES-TM-101 1316

ROBERTS, RICHARD A.
Hardware Realizations for Digital Signal Processing.
AD-A091 904/3 1359

ROBERTSON, DAVID C.
Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293

ROBERTSON, GEORGE H.
Apparatus for Removing Corn from Cob.
PAT-APPL-6-187 380 1323

ROBINSON, JOSEPH
Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436

ROBINSON, P. R.
Thermochemical Generation of Hydrogen and Oxygen from Water.
PAT-APPL-6-119 738 1454

ROCHE, R.
Tests on Mechanical Behavior of 304 L Stainless Steel under Constant Stress Associated with Cyclic Strain.
CEA-CONF-4801 1370

ROCKAR, EVELYN M.
Gas Saturation in Formation Waters.
PB81-130759 1343

RODEBACK, G. W.
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

RODENBERG, R.
Production of Optically Thin Free-Standing Oil Films from the Edge of a Rotating Disc.
DOE/ER/01388-457 1441

RODGERS, C. R.
Coso Monitoring Program.
AD-A092 417/5 1343

RODGERS, J. A.
Investigation and Evaluation of Geopressured-Geothermal Wells.
DOE/ET/28460-5 1345

RODGERS, R. L.
Silicon Target Return Beam Vidicon.
AD-923 171/3 1352

ROGALSK, WAYNE JOSEPH
An Economic and Technical Study on the Feasibility of Using Advanced Joining Techniques in Constructing Critical Naval Marine Structures.
AD-A092 299/7 1390

ROHDE, R. S.
Reprint: A Double-Ended, Unstable Resonator Submillimeter Laser.
AD-A092 044/7 1439

ROHMILLER, TOM
An Instructional Module on Library Research,
ED-183 153 1298

ROLLINGS, GEORGE WILLIAM
Implementation of the Phase Difference Trace Function for a Circular Array.
AD-A092 195/7 1407

ROOT, WILLIAM L.
1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

ROOTZEN, H.
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
AD-A092 163/5 1375

ROSAKIS, A. J.
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449

ROSEN, E. C.
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407

ROSEN, I. G.
Approximation Techniques for Parameter Estimation in Hereditary Control Systems.
AD-A092 184/1 1376

ROSENBAUM, FRED J.
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
AD-912 789/5 1360

Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
AD-912 790/3 1360

Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
AD-912 791/1 1360

ROSENBLUTH, MARSHALL N.
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

ROSENFELD, AZRIEL
Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354

Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354

Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354

Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354

ROSENTHAL, H.
Reprint: Implications of Transplantations to Aquaculture and Ecosystems,
PB81-120743 1316

ROSS, F. A.
STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421

ROSS, JOHN LEE
Design of a System Initialization Mechanism for a Multiple Microcomputer.
AD-A092 137/9 1354

ROTHSCHILD, WILLIAM J.
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

ROUSE, C. A.
Analysis of the New GCFR Upper and Lower Plenum Flow-Through Shields.
CONF-800942-4 1422

ROUSSIN, R. W.
Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
CONF-801011-14 1415

ROWLAND, STANLEY P.
Improving the Removal of Lint from Cottonseed.
PAT-APPL-6-180 542 1390

ROWLEY, J. D.
Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326

ROYAL, J. W.
Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
AD-A092 158/5 1392

ROYLANCE, DAVID K.
Molecular Fraction Behavior in Oriented Polymers.
AD-A092 241/9 1373

RUBIN, D.
Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429

RUBIN, DAVID
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342

RUBIN, R. J.
Reprint: Internal Configurations of Span-Constrained Random Walks,
PB81-126179 1377

RUDDICK, BARRY
Reprint: Critical Layers and the Garrett-Munk Spectrum.
AD-A092 464/7 1342

RUETENIK, J. RAY
Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
AD-A091 978/7 1435

FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
AD-A092 143/7 1421

RUIZ, R.
Dynamical Aspect of Fission Mechanism. Study of the exp 237 Np(N,F) Reaction Induced by Neutron Energies Between 0.5 and 1.75MeV.
CENBG-7809 1442

RUMELHART, DAVID E.
Analogical Processes in Learning.
AD-A092 233/6 1308

RUSH, C. M.
Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
AD-A092 064/3 1293

RUSHTON, L. PATRICK
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326

RUTHERFORD, P. H.
ETF Interim Design Review.
CONF-800770-1 1414

RYAN, JOHN J.
Reprint: Instrument for Determining Depth of Dehydration of Frozen Fish,
PB81-120727 1323

SAADE, WILLIAM M.
Decision Flexibility in a Learning Environment.
AD-A092 498/5 1309

SAFLEKOS, N. A.
Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 878/9 1292

SAFTER, LAURENCE
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

SAGER, P. H.
ETF Reactor Design Status.
CONF-801037-21 1415

SAHAI, R.
1.06 Micrometer High Sensitivity IR Photocathode.
AD-918 930/9 1411

SALEEB, A. F.
Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons,
PB81-120032 1350

SALOMAN, E. B.
Reprint: Evaluation of High Efficiency CsI and CuI Photocathodes for Soft X-Ray Diagnostic.
PB81-121006 1353

SALYER, I. O.
Crosslinked Crystalline Polymer and Methods for Cooling and Heating.
PATENT-4 182 398 1338

SAMANT, VIVEK S.
Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376

SAMPSON, ALLAN R.
Assessing Risks through the Determination of Rare Event Probabilities.
AD-A092 192/4 1376

SANCHEZ, I. C.
Reprint: Migration Models for Polymer Additives,
PB81-126146 1323

Reprint: Statistical Thermodynamics of Bulk and Surface Properties of Polymer Mixtures,
PB81-126153 1338

Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts,
PB81-126161 1338

SANDERS, R. P.
Reprint: Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study.
AD-A091 922/5 1317

SANDERSON, J. E.
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

SANDIFER, SHELLY S.
Electric Gel Slicer.
PAT-APPL-6-174 239 1396

SANDLER, I.
Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429

SANDLER, IVAN S.
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342

SANDORFI, G. J.
Silicon Target Return Beam Vidicon.
AD-923 171/3 1352

SANFORD, T. B.
Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342

SANKEY, O. F.
Theory of Core Excitons.
DOE/ER/01198-1323 1450

SANTODONATO, JOSEPH
Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

SANTORO, R. T.
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

SARIEL, J.
Computer Program for the Determination of X-Ray Reflections from a Randomly Oriented Polycrystalline Sample by Diffractometer.
NRCN(TN)-023 1437

SARKAR, TAPAN K.
Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358

Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

SASSI, WILLIAM V.
Anodizing Aluminum. January, 1969-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855389 1391

Biotelemetry. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855496 1316

Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391

Computer Controlled Forging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855165 1391

Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851909 1297

Cost Benefit Analysis Methods. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851669 1297

Cost Benefit Analysis Methods. January, 1972-August, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851677 1297

Cost Benefit Analysis Methods. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851651 1297

Educational Level Projections. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851891 1307

Engineering Information Systems. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855348 1299

Fire Detection and Extinguishment. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855256 1394

Hot Stamping. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855330 1391

Incentive Contracts. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851636 1297

Long-range Forecasting Methods. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851693 1297

Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855553 1391

Mobile Telephone and Paging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855355 1410

Packaging Machines. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855371 1391

Professional Continuing Education. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851701 1307

Profilometers. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851719 1398

Profit Performance. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851727 1301

Sliding Contact Lubricants. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855215 1373

Sliding Contact Lubricants. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855223 1373

Thermocouple Applications. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855157 1398

Thermocouple Applications. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855140 1398

Ultrasonic Transducers. July, 1974-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855363 1353

Vacuum Diffusion Welding. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851685 1390

SATANEK, JOSEPH JR.
Improved Synthesis of 2,4-Diamino-6-Hydroxymethylpteridine.
PAT-APPL-6-133 788 1332

SATO, S.
On the Photoassisted Hydrogen Production from Titania and Water.
AD-A092 223/7 1333

Photocatalytic Reaction of Water with Carbon over Platinized Titania.

AD-A092 222/9 1333

Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454

SATTERFIELD, R.

A Survey of Computer Simulations of Digital Avionics Systems.
AD-A091 943/1 1288

SATTI, J.

Protection for Low Current Superconducting Coils Wound with Insulated Strand Cable.
CONF-800980-20 1352

SAU, J.

Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

SAULNIER, J. C.

Complete Fusion exp 20 Ne + exp 12 C at 110 MeV.
ISN-78-26 1445

SAUNDERS, GRADY JR.

Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438

SAUNDERS, RICHARD L.

Reprint: Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
PB81-120685 1340

SAXENA, JITENDRA

Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323

SCANDOLA, FRANCO

On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334

SCHACK, CARL J.

Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332

SCHADE, O. H. SR.

Silicon Target Return Beam Vidicon.
AD-923 171/3 1352

SCHAFER, D. W.

Threatened and Endangered Fish and Wildlife of the Midwest.
ANL/EES-TM-101 1316

SCHAFER, H. C.

Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 664/2 1433

SCHAFFER, ERWIN L.

Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388

SCHAPHORST, RICHARD

Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
AD-A092 395/3 1408

Use of a Microprocessor to Implement an ADCCP Protocol (Federal Standard 1003).
AD-A092 272/4 1408

SCHARAGER, C.

Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

SCHARER, J. E.

Lower Hybrid Heating Associated with Mode Conversion on the Wisconsin Toroidal Octupole.
DOE/ET/53051-10 1447

SCHARFF-GOLDHABER, G.

Problem of Phase Transitions in Nuclear Structure.
BNL-28357 1442

SCHAUB, D. R.

Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367

SCHELHAAS, DOUGLAS P.

Comparative Histopathology of Acanthocephalan Infections in Some Freshwater Fishes.
AD-A092 258/3 1316

SCHELSKE, C. L.

Phytoplankton and Physical-Chemical Conditions in Selected Rivers and the Coastal Zone of Lake Michigan, 1972.
COO-2003-36 1322

SCHERRER, P. H.

Reprint: Origin of the Warped Heliospheric Current Sheet.
AD-A091 898/7 1292

SCHEURER, J. N.

Analysis of a Quasi-Molecular Type Dissociation Involving Three Charged Fragments. Observation and Discussion of the Production of alpha Particles at Rest from the exp 12 C- alpha - exp 12 C Structure.
CENBG-7919 1442

SCHINDLER, J. R.

A Netted Search Radar System.
PAT-APPL-6-185 469 1413

SCHLEGEL, PRISCILLA M.

Analyzing Allowance Program Administrative Costs: Account Structures and Methodology,
PB81-139412 1314

SCHMIDT, E.

Successive Collision Calculation of Resonance Absorption (AWBA Development Program).
WAPD-TM-1468 1430

SCHMIDT, J.

100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
DOE/NASA/9235-75/3 1362

SCHMIDT, LORENZ-PETER

Reprint: Spectral Domain Analysis of Dominant and Higher Order Modes in Fin-Lines.
AD-A092 120/5 1351

SCHMIDT, STEVEN P.

Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

SCHMIDT, WERNER F.

Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/8 1379

SCHMIEDER, H.

Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

SCHMITENDORF, W. E.

Optimal Control of Systems with Uncertainty.
AD-A092 389/6 1377

SCHMITTROTH, F.

Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
HEDL-SA-2227-FP 1444

SCHMITZ, WILLIAM J. JR.

Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342

SCHNEIDER, FREDERICK C.

Higher Education Uses of Telemedia in Virginia. Telecommunications Study Commission.
ED-183 206 1409

SCHNEIDER, RICHARD G.

Data Link, Helicopter Supported Radar.
AD-885 551/2 1413

SCHNEIDER, RICHARD T.

A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

SCHOFIELD, JEFFREY EDWARD

Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287

SCHORSCHER, H. D.

Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292

SCHROEDER, L. S.

Pion Production in Nucleus-Nucleus Collisions Below a Few GeV/Nucleon: Past, Present and Future.
LBL-10899 1445

SCHULDIES, J.

Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

SCHULMAN, J. H.

Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

SCHULTHEISS, PETER M.

Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406

SCHULZ, USTO FRANCIS EUGENE

Analysis of a Simulated Source of Electromagnetic Pulses.
AD-A092 440/7 1452

SCHUMANN, PAUL L.

The Overtime Pay Provisions of the Fair Labor Standards Act,
PB81-132243 1300

SCHUSTER, GARY B.

Chemically Initiated Electron-Exchange Luminescence.
AD-A092 355/7 1334

Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

Chemiluminescence of Secondary Peroxyesters.
AD-A092 322/7 1334

On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334

SCHWAB, R. R.

Reprint: Influence of Interdental Contacts on Periodontal Status.
AD-A092 425/8 1319

SCHWARTZ, A.

The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
PB81-120172 1388

SCHWERDT, CHRISTOPHER B.

Offset Correction Apparatus for a Successive Approximation A/D Converter.
PATENT-4 228 423 1361

SCORZELLI, R.

Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292

Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292

SCORZELLI, R. B.

Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
CBPF-A0003/79 1292

Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

SCOTT, JOHN F.

Futures Group Periodic Report-3,
AD-A092 202/1 1302

SCOTT, R. F.

Full-Scale Experimental Investigation of a Modern Earth Dam,
PB81-123788 1384

SEBASTIANI, LAMBERT J.

The Delphi Technique and ITS Applicability to Army Systems Analyses.
AD-904 407/4 1378

SEBESTYEN, A.

Tetrads of Observers and Einstein's Equations.
KFKI-1979-65 1449

SEDGWICK, R. T.

A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
AD-B015 193/6 1433

SEDGWICK, ROBERT T.

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435

SEGAL, LEONIE

Passenger Transport Innovation in Adelaide: Taxi-Cabs.
PB81-125460 1384

SEGEV, M.

Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427

SEIDENSTICKER, R. G.

Silicon Web Process Development.
DOE/JPL/954654-80/12 1331

SEIDL, LOREN A.

Multi-Tone Jammer.
PAT-APPL-6-181 940 1410

SEIDMAN, D. N.

Range Profiles of Low Energy (100 to 1500 EV) Implanted exp 3 He and exp 4 He in Tungsten. II. Analysis and Discussion. Materials Science Center Report No. 4108.
DOE/ER/03158-73 1336

SEIFFERT, S. L.

Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

SELAN, J. C.

Technical Evaluation of the Noise and Isolation Testing of the Reactor Protection System for the Davis Besse Nuclear Power Station, Unit 1.
UCID-19683 1428

SELKIRK, J. K.

Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
CONF-8010108-3 1315

SELLERS, WILLIAM LESTER

Measurement of Performance Parameters for a FLIR Thermal Imaging System.

AD-A092 140/3 1411

SELMAN, J. R.
Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
DOE/ER/04445-T1 1336

SEMPLE, CLARENCE A.
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303

SENDZUK, GEORGE T.
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360

SEVCIK, P. J.
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407

SEVERUD, L. K.
Experience with Simplified Inelastic Analysis of Piping Designed for Elevated Temperature Service.
HEDL-SA-1933 1428

Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428

Seismic Analysis of Piping with Nonlinear Supports.
HEDL-SA-1994-FP 1428

SEWELL, ELDON
Photo-Carto Interface.
AD-893 054/7 1340

SEYFERTH, D.
Low-Cost Solar Array Project. Task I. Silicon Material. Investigation of the Hydrogenation of SiCl sub 4.
DOE/JPL/955382-79/6 1365

SEYMOUR, W. C.
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

SHABANOWITZ, JEFFREY
Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
AD-A092 497/7 1335

SHADOW, T. O.
Magnus and Roll-Damping Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B008 209/9 1434

SHAH, BABUBHAI V.
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321

SHAHAK, Y.
Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315

SHAPIRA, Y.
Interdiffusion of Metals and Semiconductors.
AD-A091 961/3 1450

SHAPIRO, SAM
Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321

SHAPIRO, YAIR
Sex Differences in Acclimation to a Hot-Dry Environment.
AD-A092 360/7 1327

SHARP, DAN S.
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets,
AD-A092 359/9 1324

SHAUNFIELD, JOHN E.
Optical Couplers.
AD-B009 489/6 1440

SHAVER, G. R.
Reprint: Response to Fertilization by Various Plant Growth Forms in an Alaskan Tundra: Nutrient Accumulation and Growth.
AD-A092 116/3 1316

SHAW, ROBERT R.
Reprint: A Test of Two Theories for the Low-Frequency Cutoffs of Nonthermal Continuum Radiation.
AD-A092 086/8 1293

SHEALY, Y. FULMER
Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332

SHEEHAN, J. E.
Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367

SHEELEY, N. R. JR.
The Equatorial Latitude of Auroral Activity during 1972-1977,
PB81-132912 1294

SHEESLEY, D. C.
Williams Air Force Base Air Quality Monitoring Study,
AD-A092 165/0 1381

SHEIKH, Q. M.
One-Leg Formulas for Stiff Differential Equations.
COO-2383-0070 1357

SHELLEY, PHILIP E.
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344

SHELLY, T. L.
Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1367

SHELTON, G. A.
Summary of the Western Energy Overhead Monitoring Project.
PB81-129009 1385

SHEPPARD, D.
A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385

SHEPPARD, DENNIS DEAN
Radio Direction Finding on High Frequency Short Duration Signals.
AD-A092 136/1 1410

SHERIDAN, J. A.
EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300

SHETTLE, E. P.
Reprint: Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment.
AD-A092 005/8 1440

SHIBATA, M.
The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
AD-A092 247/6 1369

SHIEH, LEANG S.
Approximate Linear Regulator and Kalman Filter.
AD-A092 176/7 1376

SHIER, W. G.
PWR Steamline Break Analysis Assuming Concurrent Steam Generator Tube Rupture.
BNL-NUREG-26903 1427

SHIMIZU, S.
Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454

SHIMOMURA, TAKESHI
Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373

SHINDO, M.
Oxidation Kinetics and Spallation of Oxide Film of the Structural Metal in HTR Helium under Thermal Cycles.
JAERI-M-8210 1371

SHIRER, H. N.
Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362

SHIRLEY, ARTHUR R. JR.
Granulation and Coating by Improved Method of Heat Removal.
PATENT-4 213 924 1390

SHIRLEY, JOHN A.
Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439

SHISHA, OVED
Optimization of Multichannel Processing.
AD-A091 987/8 1358

SHMAL'KO, G. I.
Analysis of the System of Poloidal Fields in the "T-10M" Device.
NIIEFA-P-B-0430 1417

SHOREY, C. E.
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300

SHOREY, R. R.
Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978,
AD-A092 043/9 1454

SHORT, R. W.
Stability Analysis of Cylindrical Vlasov Equilibria.
DOE/ET/53051-113 1447

SHROBE, HOWARD E.
A Hypothetical Monologue Illustrating the Knowledge Underlying Program Analysis.
AD-A092 294/8 1356

SHUCK, L. Z.
Apparatus for Installing Condition-Sensing Means in Subterranean Earth Formations.
PAT-APPL-6-101 370 1396

SHULTZ, M. J.
Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433

SHUM, L. Y.
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390

SHUVAL, H. I.
Disinfection of Viruses in Water by Ozone.
AD-A092 252/6 1318

SHVETSKIY, B. I.
Ways for Providing a High-Speed Analog-to-Digital Converter with Wide Dynamic Range--Translation.
AD-A092 099/1 1359

SIBBETT, B. S.
Geology of the Colado Geothermal Area, Pershing County, Nevada.
DOE/ID/12079-8 1343

SICKLES, ROBIN
The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
PB81-126732 1307

SICRE, A.
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442

SIDES, NATHAN T.
Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
AD-A091 909/2 1392

SIDES, W. H. JR.
A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
NUREG/CR-1761 1422

SIEGEL, HOWARD JAY
PASM: A Reconfigurable Multimicrocomputer System for Image Processing.
AD-A092 182/5 1355

SIFFERT, P.
Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

SILLERS, WILLIAM M.
Redundant Area Coding Study.
AD-888 625/1 1358

SIM, KWANG-SOUK
Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443

SIMMONS, M. S.
Phytoplankton and Physical-Chemical Conditions in Selected Rivers and the Coastal Zone of Lake Michigan, 1972.
COO-2003-36 1322

SIMPSON, ARTHUR W.
Food System Support of the Relocation Strategy in California. Volume I. Analysis.
AD-A092 056/1 1400

Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
AD-A092 164/3 1400

SIMPSON, R. S.
High Temperature Electronics and Instrumentation Seminar Proceedings.
SAND-80-0834C 1348

SIMPSON, S. W.
Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
IFUSP-P-180 1448

SIMS, T. M.
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(Dr) 1420

SINCLAIR, C. K.
High Intensity Polarized Electron Sources.
SLAC-PUB-2621 1441

SINGER, ALLEN W.
Physiological and Pharmacological Effects Following Oral Administration of Monopropellants, August 1978-September 1979.
AD-B042 976/1 1328

SINGH, MAHENDRA P.
Seismic Stability Evaluation of Earth Structures.
PB81-123069 1351

SINN, EKK
Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332

SITES, JOSEPH L.

Futures Group Periodic Report-3,
AD-A092 202/1 1302

SKINNER, DOYLE P.

Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353

SKINNER, ELIZABETH A.

Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321

SKINNER, M. S.

Development and Testing of Restraints for Nuclear Piping Systems.
UCB/EERC-80/21 1422

SKOLNICK, M. L.

Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

SKRYPNIK, A. V.

Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

SKUTCH, M. E.

Silicon Web Process Development.
DOE/JPL/954654-80/12 1331

SLAGA, T. J.

Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
CONF-8010108-3 1315

SLIGER, G. J.

Radioactive Liquid Wastes Discharged to Ground in the 200 Areas During 1979.
RHO-CD-79-34-4Q 1425

SLOB, G.

Bereikbaarheid als Vestigingsplaatsfaktor voor Bedrijven (Attainability as a Location Factor for Industry),
PB81-125635 1300

SLOVACEK, R. E.

Energetic Control of Intact Chloroplast Photosynthesis.
BNL-28423 1315

Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315

SMIDDY, M.

Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 878/9 1292

SMILEY, ROBERT F.

Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
AD-A091 978/7 1435

FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
AD-A092 143/7 1421

SMITH, CHARLES L.

Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396

SMITH, D. M.

Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354

SMITH, DUANE D.

The Effectiveness of Horizontal Drains.
PB81-124851 1384

SMITH, JOHN V. JR.

Personal, Situational, and Organizational Determinants of Navy Enlisted Attrition.
AD-A092 412/6 1305

SMITH, L. E.

Reprint: Migration Models for Polymer Additives,
PB81-126146 1323

SMITH, ROBERT L.

Assessing Risks through the Determination of Rare Event Probabilities.
AD-A092 192/4 1376

SMITH, STEPHEN W.

Contrast Resolution Tissue-Equivalent Ultrasound Test Object.
PAT-APPL-6-186 381 1324

SMITH, W. C.

Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

SMOOTS, CHARLES W.

Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 476/7 1396

SMULL, CECILE

Housing Our Families,
PB81-139453 1314

SMUTZ, EDWIN R.

Soldier Satisfaction with Life in Restructured Units during Phase I of the Restructuring of the Heavy Division Test.
AD-A092 106/4 1308

SNAIDER, R.

BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking: Resolution of Generic Technical Activity A-10.
NUREG-0619-REV-1 1428

SNIDER, WILLIAM ALLEN

An Evaluation of the Application of ISD to P-3 Pilot Training.
AD-A092 126/2 1304

SNOVER, K. A.

Polarized Proton Radiative Capture Studies of Giant Resonances.
DOE/ER/01388-454 1443

SNOW, TERRY DEAN

A Statistical Analysis of Western North Pacific Ocean Tropical Cyclone Danger Area Forecasts.
AD-A092 408/4 1295

SNYDER, ROBERT J.

Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

SO , E.

Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

SOARES, E. A.

Relaxation Rates of Electronic and Nuclear Magnons in Antiferromagnetic Materials.
INIS-mf-5643 1451

SODERSTRAND, MICHAEL A.

Design and Implementation of Multi-Input Adaptive Signal Extractions.
AD-A092 265/8 1355

SODETZ, F. J.

Reprint: Reduction of Heroin Intake in Baboons by an Economic Constraint.
AD-A092 342/5 1325

SOEDE, M.

Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator)--Translation.
PB81-125650 1309

SOKOL, LARRY S.

Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368

SOKOLOV, S. N.

General Solution of Many-Channel Inverse Scattering Problem.
IFVE-OTF-79-139 1444

SOLMAN, F. J.

Photovoltaic Power System at Natural Bridges National Monument.
DOE/ET/20279-105 1365

SOLOMON, A.

Composition of Solidified Binary Alloy from a Simple Solidification Model.
ORNL/CSD-66 1371

SONA, DAVID A.

A Case Study Anlaysis of a System Acquisition by a Field Activity.
AD-A092 178/3 1296

SONNTAG, B.

3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336

SORENSON, HAROLD W.

Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376

SORIN, A. S.

Structure of Representations of Conformal Supergroup in the OSp(1,4) Basis.
JINR-R-2-12670 1449

SOULE, J. L.

Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
EUR-CEA-FC-1013 1416

SOWA, EDWARD A.

Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291

SPAIN, JIM C.

Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

SPALARIS, C. N.

Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429

SPANIER, GERARD

Consolidated Car Display: A Summary Report of the Process and the Results of the Consolidation of Critical and Supplementary Terminal Area Air Traffic Control Information for Display Presentation.
AD-A092 450/6 1412

SPANNAGEL, G.

AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
KFK-2860 1429

As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429

SPARKS, LESILE E.

Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338

SPARKS, M.

Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

SPECK, PETER WERNER

The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
AD-A092 217/9 1294

SPEHN, STEPHEN LESTER

Deep Level Transient Spectroscopy as an Experimental Technique.
AD-A091 941/5 1449

SPENCER, DAVID P.

Independent Evaluation Report for Platoon Early Warning System (PEWS-IER) AN/TRS-2( ).
AD-B023 039/1 1400

SPENCER, R.

Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354

SPENCER, RICHARD H.

Development of a Temperature Controller for a Vuilleumier (VM) Cycle Power Cylinder.
AD-B007 816/2 1378

SPENDER, P.

Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371

SPERLING, J. L.

Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415

Wave Heating Models for Ion-Cyclotron Heating in EBT-S.
DOE/ER/53092-T2 1415

SPERRY, J. S.

Development and Field Testing of a Process for Recovering Heavy Crude Oil in the Carlyle Pool-Allen County, Kansas Using the Vapor Therm Generator. Final Report.
DOE/BETC-2880-1 1344

SPETZ, SALLY H.

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321

SPIES, R.

Design Study for a 100-Watt Turboalternator Power Unit.
AD-B029 195/5 1364

SPOLANDER, KRISTER

Yrkesfoerarutbildningen Infoer 1980-Talet. Resultat fran Gruppdiskussioner med Laerare inom Yrkesfoerarutbildningen Inom Gymnasieskola och Arbetsmarknadsutbildning (Professional Driver Training for the 1980's. Opinions and Experiences of Professional Driver Teachers),
PB81-126472 1307

SPRANGLE, PHILLIP

Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

SPRINGER, L. W.

Design Study for Ground-Based Atmospheric Lidar System.
AD-A091 955/5 1292

SPRINGER, MICHAEL

Enforcing Housing Quality Standards: Some Findings From the Experimental Housing Allowance Program,

PERSONAL AUTHOR INDEX

PB81-139008 1310

SPRINGMAN, G. F.
Flow-Closing Bleed Valve Assembly.
PAT-APPL-6-171 611 1455

SPYROPOULOS, CHRIS E.
Design of Fluidic Devices for Small Arms Stabilization,
AD-A092 027/2 1435

SRINIVASAN, J.
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

SRIVASTAVA, R. D.
A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
AD-A092 148/6 1456

STADELMAN, S. G.
STARAN Image Processing.
AD-A091 928/2 1353

STAEL VON HOLSTEIN, CARI-AXEL S.
A Manual for Encoding Probability Distributions.
AD-A092 259/1 1378

STAMPER, J. A.
Interferometric Measurement of Small Refraction Angles.
NRL-MR-4353 1448

Preheat Studies on Laser Ablatively-Accelerated Foils.
NRL-MR-4356 1417

STANDAHAR, R. M.
Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978.
AD-A092 043/9 1454

STANSBERRY, JAMES R.
Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
AD-923 272/9 1358

STAPLES, B. A.
Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423

STARKS, FRED W.
Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331

STEEN, WILLIAM C.
Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324

STEIDLEY, ROY B.
30MM GAU-8/A Plastic Frangible Projectile.
AD-B027 446/4 1433

STEIGLITZ, KENNETH
Reprint: Optimal Design of FIR Digital Filters with Monotone Passband Response.
AD-A092 124/7 1359

STEIGLTIZ, KENNETH
Reprint: A Note on Variable Recursive Digital Filters.
AD-A092 131/2 1359

STEIN, S. R.
Reprint: Space Applications of Superconductivity: Resonators for High Stability Oscillators and Other Applications.
PB81-119844 1353

STEINBERG, M.
Keynote Address at the International Conference on Nuclear Waste Transmutation.
BNL-28193 1423

STEINER, D.
ETF Design Activities: Status and Future Direction.
CONF-801011-15 1415

ETF Interim Design Review.
CONF-800770-1 1414

STEINER, J. S.
Aircraft Avionics Tradeoff Study.
AD-917 204/0 1358

STEINWACHS, DONALD M.
Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321

STEPHEN, EDWARD L.
Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
AD-A092 285/6 1325

STEPHENSON, M. J.
Method for Improving Dissolution Efficiency in Gas-Absorption and Liquid Extraction Processes.
PAT-APPL-6-111 495 1337

STERNBERG, S.
Color in Internal Supersymmetry Unification.
DOE/ER/03992-414 1444

Sequential Internal Supersymmetry.
DOE/ER/03992-412 1444

STEVENSON, P. M.
Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446

STEWART, ALEXANDER G.
Upgrading the AURORA Simulator.
AD-A092 501/6 1452

STEWART, C. W.
Improvements to the COBRA-TF (EPRI) Computer Code for Steam Generator Analysis. Final Report.
EPRI-NP-1509 1427

STEWART, DONALD D.
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
PB81-132987 1324

STEWART, L. D.
Implications of Tritium in Neutral Beam Injectors.
CONF-800427-19(Dr) 1414

STEWART, R. J. S.
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390

STEWART, RICHARD LEE
Considerations for an Assembler Scheduled Multi-Microprocessor System.
AD-A092 216/1 1355

STIKO, P. THOMAS
The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
PB81-122988 1299

STILES, W. H.
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412

STIRLING, A. J.
Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429

STIRLING, W. J.
Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446

STITT, D. H.
License Application for Type 48HX Cylinder for Shipment of Natural Assay UF sub 6.
KY-697 1422

STOBIE, IRVIN C.
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436

STOLL, LAURENCE
Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436

STONE, C. A.
Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367

STONE, G.
Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362

STONE, LOYD R.
A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291

STONER, R. D.
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319

STOUGHTON, HERBERT W.
Simple Algorithms for Calculation of Scale Factors for Plan Coordinate Systems (1927 NAD and 1983 NAD),
AD-A092 461/3 1377

STOVALL, GERALDINE K.
Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text,
HRP-0902234/4 1320

STRAIT, E. J.
High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

STRANO, MICHAEL A.
Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16,
AD-A092 392/0 1392

STRATTON, THOMAS G.
Spent Nuclear Fuel Recovery. May, 1972-February, 1980 (Citations from the NTIS Data Base).
PB81-850687 1430

STRAUCH, R. G.
Evaluation of a Meteorological Airborne Pulse Doppler Radar.
AD-A092 276/5 1412

STRAUSS, KUPT ALLAN
Reflexive Launch Strategies.
AD-A092 300/3 1400

STRICKLAND, H.
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
AD-A092 203/9 1309

An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
AD-A092 155/1 1309

STRUGALSKI, Z.
Monotonous Braking of High Energy Hadrons in Nuclear Matter.
JINR-E-1-12086 1445

STUCK, R.
Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

STUFFLEBEAM, J. H.
Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
DOE/ET/53087-2 1448

SUCKEWER, S.
Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418

SUENAGA, M.
Bend Strain Tolerances of a Nb sub 3 Sn Conductor Proposed for Use in the Magnetic Fusion Energy Program.
BNL-28375 1414

SUGIYAMA, L.
Ballooning Mode Second Stability Region for Sequences of Tokamak Equilibria.
DOE/ET/53073-T1 1416

SULLIVAN, MICHAEL
Water Resource Priorities for the Midwest.
PB81-129801 1386

SULLIVAN, R. G.
Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347

SULLIVAN, T. J.
Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

SUMMERS, C. J.
Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450

SUSSKIND, I.
Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.
AD-892 041/5 1359

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
AD-892 042/3 1359

SUSSMAN, GERALD J.
A Hypothetical Monologue Illustrating the Knowledge Underlying Program Analysis.
AD-A092 294/8 1356

SUTHERLAND, KERRY J.
MILES Pressure/Seismic Response Engineering Development of MILES Test Fixture.
AD-A092 200/5 1400

SUZUKI, T.
Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420

Oxidation Kinetics and Spallation of Oxide Film of the Structural Metal in HTR Helium under Thermal Cycles.
JAERI-M-8210 1371

SVEINSSON, BJORN INGI
General Applicability of a Nonlinear Model of a One Story Steel Frame,
PB81-124877 1395

SWEAN, T. F. JR.
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

SWIECA, J. A.
Scattering Theory and 1/N Expansion in the Chiral Gross-Neveu Model.
PUC-tn-08/79 1446

SZABO, NICHOLAS S.
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399

SZAFRANSKI, J. P.
Off-Line Orthographic Printer.
AD-919 575/1 1399

SZE, NIEN DAK
Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294

SZIKLAS, E. A.
Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
DOE/ET/53087-2 1448

TABOR, EDWARD
Inactivation on Non-A, Non-B Hepatitis Agent.
PAT-APPL-6-150 320 1325

TAFLOVE, ALLEN
Evaluation of Time Domain EM Coupling Techniques. Volume I.
AD-A092 031/4 1452

Evaluation of Time Domain EM Coupling Techniques. Volume II.
AD-A092 032/2 1452

TAGIROVA, F. A.
Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

TAJIMA, Y.
Power FET Contact Technology.
AD-A092 320/1 1351

TAKAFUJI, ERNEST T.
Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319

TAKAHASHI, H.
Disruptive Shift of Magnetic Axis in Non-Circular Tokamaks.
PPPL-1707 1418

TALLMAN, R. L.
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

TALMAGE, LISA ANNE
Design and Implementation of an Integrated Screen-Oriented Text Editing and Formatting System.
AD-A092 180/9 1297

TAM, W. G.
Reprint: Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions.
AD-A092 051/2 1440

TAMAS, G.
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442

TANCHUK, V. N.
Peculiarities of Radiation Heat Transfer of Structural Elements of High-Temperature Physical Installations.
NIIEFA-P-A-0424 1417

TANG, VICTOR K. T.
1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

TARZANIN , F. J.
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289

V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438

TAUBMAN, PAUL
The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
PB81-126732 1307

TAYLOR, C. L.
Preliminary Geochemical and Physical Testing of Materials for Plugging of Man-Made Accesses to a Repository in Basalt.
RHO-BWI-C-66 1425

TAYLOR, CHARLES W.
Futures Group Periodic Report-3,
AD-A092 202/1 1302

TAYLOR, M. LYNN
Expanded Phase I ACS Experiments. Volume I. Experimental System Testing and Evaluation.
AD-893 139/6 1340

Expanded Phase I ACS Experiments. Volume II. Design Requirements for a Prototype Cartographic Finishing Subsystem.
AD-893 140/4 1340

TAYLOR, R. B.
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289

TAYLOR, W. H.
Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441

TEAGUE, BARBARA D.
Reprint: Migration Rate of Mud Bacteria as a Function of Magnetic Field Strength.
AD-A092 326/8 1340

TEAGUE, J. R.
Advanced Modulator II.
AD-922 519/4 1409

TEAS, CAROL L.
Carbon Dioxide Activation; Formation of trans- (Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

TELFORD, L. E.
Reprint: Frequency Dependence of Slant Path Rain Attenuations at 15 and 35 GHZ.
AD-A092 505/7 1413

TEMPELMAN, J.
Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope),
PB81-125171 1338

TENENBAUM, JAY M.
Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.
AD-A092 146/0 1355

TENORIO CASTILLEROS, M. D.
0.5 to 6 MeV Ar Ion Induced X-Ray Emission in View to Analytical Application.
CRN-CPR-79-7 1336

TEOFILO, V. L.
Preconceptual Design and Assessment of a Tokamak Hybrid Reactor.
PNL-2720 1418

TERENZETTE, JOAN R.
Bathymetric Data Reduction System.
AD-A091 942/3 1348

TESSMANN, R. K.
Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
AD-A092 289/8 1373

TEUTSCH, R. P.
Aircraft Avionics Tradeoff Study.
AD-917 204/0 1358

THIBOLD, LAWRENCE E.
Intracranial Pressure Monitoring Device.
PAT-APPL-6-163 952 1324

THIERRY-MIEG, J.
Soft-Group-Manifold Structure of Supergravity, and the Proof of Unitarity.
DOE/ER/03992-417 1448

THOMAS, J. P.
Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337

Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371

THOMAS, JOHN B.
Reprint: Memoryless Quantizer-Detectors for Constant Signals in m-Dependent Noise.
AD-A092 123/9 1358

Reprint: Threshold Effect on Error Probability in QAM Systems.
AD-A092 122/1 1408

THOMAS, R. L.
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

THOMAS, R. W.
Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
PB81-142192 1367

THOMASSEN, K. I.
MFTF-Progress and Promise.
UCRL-85002 1420

THOMPSON, B. T. JR.
State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393

State-of-the-Art Assessments on Critical Coal Conversion Equipment.
CONF-801090-3 1330

THOMPSON, D. S.
Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys.
PB81-121865 1372

THOMPSON, Q. E.
Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

THOMPSON, W. E.
Infrared Measurement Variability Analysis.
AD-A092 068/6 1411

THOMSON , SANDRA A.
Physiological and Pharmacological Effects Following Oral Administration of Monopropellants, August 1978-September 1979.
AD-B042 976/1 1328

THORNTON, J. P.
Comparative Ranking of 0.1-10 MW/sub E/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
SERI/TR-351-461 1366

THORNTON, S. A.
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456

Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938,
AD-A091 915/9 1288

THORSON, L. D.
Effects of Dimensionality and Boundary Conditions on Thermal Calculations.
UCID-18681 1425

TIGHE, N. J.
Reprint: Plastic Deformation of Fine-Grained Alumina (Al2O3): II, Basal Slip and Nonaccommodated Grain-Boundary Sliding,
PB81-121543 1368

TIOMNO, J.
Gauge Field Copies.
PUC-tn-01/79 1446

TLUSTY, J.
Technology of Machine Tools. Volume 3. Machine Tool Mechanics.
UCRL-52960-3 1392

TOBA, Y.
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

TOBIAS, A.
Exp 235 U Fission Product gamma Spectra: A Comparison Between Experiment and Calculation.
CEGB-RD/B/N-4667 1442

TOEBES, G. H.
Green River Basin Flow Forecasting Models.
PB81-124448 1343

TOKAR, ROBERT L.
Reprint: The Volume Emissivity of Type III Radio Bursts.
AD-A091 895/3 1292

TOMAYKO, MICHAEL A.
FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
AD-A092 143/7 1421

TOMLINSON, EDWARD MASON
A New Horizontal Gradient, Continuous Flow, Ice Thermal Diffusion Chamber and Detailed Observation of Condensation-Freezing and Deposition Nucleations.
AD-A092 479/5 1294

TOOPS, E. C.
Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

TOUART, CHANKEY N.
Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

TOUSSET, J.
Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337

TOVEY, CRAIG A.
Semiantichains and Unichain Coverings in Direct Products of Partial Orders.
AD-A092 256/7 1377

TOY, M. S.
Perfluorinated Epoxides.
PAT-APPL-6-182 563 1374

Perfluorocarbon Ethers.
PAT-APPL-6-182 564 1374

Perfluorocompounds.
PAT-APPL-6-182 562 1374

TRACI, R. M.
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
AD-B007 943/4 1356

Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
DOE/ET/20280-3 1365

Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289

TRANTINA, G. C.
Ceramic Materials for Fusion Reactors. Interim Report.
EPRI-AP-1499 1367

TRAVALLONI, A.
Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

TREDICI, THOMAS J.
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325

TRELLUE, R.
STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421

TREVOR, D. J.
Photoelectron Photoion Molecular Beam Spectroscopy.
LBL-11434 1337

TRILLING, G. H.
Low Energy Weak Interactions and Decays.
LBL-11510 1445

TRIPATHI, RAM C.
Reprint: The Effect of Errors in Diagnosis and Measurement on the Estimation of the Probability of an Event.
AD-A092 430/8 1377

TROMP, R. L.
Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

TROPPER, PETER
Moving from Reaction to Anticipation in U.S. Import Policies.
PB81-125544 1300

TROST, R. P.
Some Extensions of the Nerlove-Press Model.
AD-A091 946/4 1375

TROTTER, B. L.
Evaluation of a Meteorological Airborne Pulse Doppler Radar.
AD-A092 276/5 1412

TROUT, D. R.
Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351

TRUBEY, D. K.
Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
CONF-801011-14 1415

TRUDE, SALLY
Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment.
PB81-139206 1313

Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment.
PB81-139156 1312

TRUTKO, JOHN
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program.
PB81-139016 1310

TRUTT, FREDERICK C.
Interactive Mine-Power-System Analysis--APL Fault Program.
PB81-130858 1348

TRZCINSKI, E.
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

TSUNODA, ROLAND T.
Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
AD-A091 980/3 1293

TULLINGTON, B.
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
AD-A092 203/9 1309

An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
AD-A092 155/1 1309

TUNG, M. S.
A Mechanism for Incorporation of Carbonate into Apatite.
PB81-126104 1320

TUNG, YEOU-KOUNG
Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387

TURCHE, PETER J.
Power Circuit Utilizing Self Excited Hall Effect Switch Means.
PAT-APPL-6-189 237 1361

TWOGOOD, R. E.
Efficient Design of Two-Dimensional Recursive Digital Filters. Final Report.
UCID-18819 1361

TYNAN, EILEEN A.
An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
PB81-132334 1321

UCKAN, N. A.
Configurational Analysis of an EBT Reactor in Various Magnetic Geometries.
CONF-801011-10 1414

UETSUKA, H.
Zircaloy Cladding Embrittlement Due to Steam Oxidation in Stagnant Steam Condition.
JAERI-M-8081 1371

UGIANSKY, G. M.
Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys.
PB81-121865 1372

UHLMANN, JUDITH
Telemedia Research and Innovation. Telecommunications Study Commission.
ED-183 208 1410

ULABY, FAWWAZ T.
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412

ULRICKSON, M.
Material Selection for TFTR Limiters.
PPPL-1719 1418

UOTINEN, V. O.
Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

URBAN, KATHERINE A.
Reprint: Influence of Temperature on Complement-Dependent Immune Damage to Lipsomes.
AD-A092 087/6 1318

URBAN, STEPHEN J.
Use of a Microprocessor to Implement an ADCCP Protocol (Federal Standard 1003).
AD-A092 272/4 1408

URBAN, STEVE
Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
AD-A092 395/3 1408

UTKIN, YU. M.
Mechanism of Electric Conductivity in Beryllium Oxide.
IAE-3151 1450

VAAGEN, J. S.
Form Factor and Multistep-Transfer Effects in Light-Ion and Heavy-Ion Induced Transfer Reactions on Rotational and Transitional Nuclei.
BUP-104 1442

VAN BROCKLIN, S. T.
An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456

VAN DELFT, N.
Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.
AD-892 041/5 1359

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
AD-892 042/3 1359

VAN PUT, WALTER
Accelerometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851511 1398

Accelerometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851495 1397

Accelerometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851529 1398

Accelerometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851503 1397

Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855413 1390

Cathode Ray Tubes. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855421 1353

Centrifuges. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851131 1397

Centrifuges. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851115 1397

Centrifuges. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851149 1397

Centrifuges. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851123 1397

Cyclotrons. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851065 1441

Cyclotrons. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851040 1441

Cyclotrons. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851073 1441

Cyclotrons. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851057 1441

Demodulators. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851297 1361

Demodulators. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851289 1361

Demodulators. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851305 1361

Densitometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851263 1397

Densitometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851248 1397

Densitometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851271 1397

Densitometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851255 1397

Extractive Metallurgy. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851339 1372

Extractive Metallurgy. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851313 1372

Extractive Metallurgy. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851321 1372

Extraterrestrial Atmospheres. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851198 1292

Hydrocracking. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851628 1339

Hydrocracking. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851602 1339

Hydrocracking. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851610 1339

Isostatic Pressing. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855439 1391

Jet Stream. June, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-855470 1296

Kalman Filters. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851107 1397

Kalman Filters. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851081 1397

Kalman Filters. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851099 1397

Laminar Flow of Fluids in Pipes. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855447 1439

Nylon Products. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855405 1374

Plastics Extrusion. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855124 1390

Polyethylene Adhesives. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855322 1367

Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855272 1374

Sheet Metal Forming. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855454 1391

Solenoid Valves. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).

PB81-855462 1394

Synthetic Fibers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855397 1369

VAN SAVAGE, JOHN F.

Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437

VANDER, J. B.

An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367

VANRIEL, HERMAN C. H. A.

Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331

VARDY, A. E.

Flow Restrictions in Railway Tunnels,
PB81-130395 1389

VATIKIOTIS, COSTA SOZON

Analysis of Combustion and Heat Transfer in a Porous Graphite Medium.
AD-A092 094/2 1368

VAUGHAN, D. K.

Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429

VAUGHAN, J. A.

Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
AD-A092 268/2 1328

VAUGHAN, N. D.

Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
ORNL/EIS-156/V1 1424

VEGH, L.

Elastic Pd and Quasifree A(p, Nd)B Scattering at Intermediate Energies.
JINR-E-2-12369 1445

VENERUSO, A. F.

High Temperature Electronics and Instrumentation Seminar Proceedings.
SAND-80-0834C 1348

VENEZKY, D. L.

A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373

VENIER, G. O.

An Investigation of HF Direction-Finding Accuracy on the Churchill-Ottawa Auroral Zone Path.
AD-A092 311/0 1410

An Investigation of HF Direction-Finding Accuracy on the Frobisher Bay-Ottawa Auroral Zone Path.
AD-A092 312/8 1410

VERMESS, MICHAEL

Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325

VERRALL, A. P.

Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F),
PB81-139388 1374

Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
PB81-139370 1374

VERRILL, THOMAS D.

Reverse Velocity Rotor System for Rotorcraft.
PATENT-4 227 856 1289

VESAVAGE, V. F.

Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, October-December 1979 and January-March 1980.
DOE/ET/13395-3/4 1453

VEST, JAMES W.

Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437

VICTOR, R. A.

Technical Evaluation of the Proposed Technical Specification Change for the Arkansas Nuclear Power Station, Unit 2.
UCID-18676 1422

VIDICH, CHARLES

Overcoming Land Use Barriers to Solar Access: Solar Planning Recommendations for Local Communities.
PB81-127359 1385

VILLENEUVE, A. T.

Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359

VINAL, STEVEN I.

Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325

VINCENT, MARK A.

Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

VINES, RONALD C.

Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304

VIRCHIS, V. J.

Prediction of Impact Factor for Military Bridges.
PB81-130379 1386

VITTIMBERGA, BRUNO M.

UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385

VOGEL, H. F.

Theory of the Arc Discharge in Air Blast Breakers.
LA-8488-T 1417

VOGEL, WILLIAM

Response of a Point Excited Infinitely Long Cylindrical Shell Immersed in an Acoustic Medium.
AD-A091 947/2 1449

VOGELSANG, JAMES E.

Pre-Expended Bin Material Management at Naval Air Rework Facilities.
AD-A092 319/3 1401

VOGT, MICHAEL

Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1363

VOLOSHINOVA, N. A.

Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343

VRABLE, D. L.

High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428

WADDELL, J. L.

A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
AD-B015 193/6 1433

WADDELL, JERRY L.

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435

WADE, CLINTON P.

Improving the Removal of Lint from Cottonseed.
PAT-APPL-6-180 542 1390

WADE, WILLIAM F. JR.

XM714 Delay Fuze Tests.
AD-B024 828/6 1433

WAGNER, A.

Range Profiles of Low Energy (100 to 1500 EV) Implanted exp 3 He and exp 4 He in Tungsten. II. Analysis and Discussion. Materials Science Center Report No. 4108.
DOE/ER/03158-73 1336

WAGNER, M. H.

Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
AD-B006 844/5 1350

WAGNER, S. E.

Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428

WAGSCHAL, J. J.

Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

WAI, WILLON B.

Approximate Linear Regulator and Kalman Filter.
AD-A092 176/7 1376

WALCH, LEONARD A.

Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant,
PB81-130049 1322

WALKDEN, M. W.

Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363

WALKER, CLARENCE L. JR.

Local Energy Monitoring and Control Analysis.
AD-A091 929/0 1378

WALKER, DELORES H.

Results of the Solar Cell Experiments aboard the NTS-2 Satellite after 811 Days in Orbit.
AD-A092 438/1 1363

WALKER, R. S.

A Study of Filled and Sparse Line Array Beamformers.
AD-A092 367/2 1407

WALKER, VERN H.

Data Link, Helicopter Supported Radar.
AD-885 551/2 1413

WALLACE, A. R.

Magnus and Roll-Damping Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B008 209/9 1434

WALSER, R. M.

Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

WALSH, J. MICHAEL

Interaction of Drugs in the Hyperbaric Environment, Bethesda, Maryland, 13-14 September 1979. The Undersea Medical Workshop (21st),
AD-A092 451/4 1328

WALSH, P. J.

Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.
CONF-8010108-2 1319

WANG, FUN-DEN

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380

WANG, SHYUAN

Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354

WANNEMACHER, ROBERT W. JR.

Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
AD-A092 285/6 1325

WARD, D. S.

FEMWATER: A Finite-Element Model of Water Flow Through Saturated-Unsaturated Porous Media.
ORNL-5567 1343

WARD, S. H.

Bipole-Dipole Survey at Roosevelt Hot Springs, Thermal Area, Beaver County, Utah.
DOE/ID/12079-15 1342

WARD, WILLIAM C.

Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
AD-A092 292/2 1288

WARREN, BRUCE A.

Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341

WARREN, R.

Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

WARREN, T. C.

Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
AD-B014 875/9 1455

WASSEF, HILDA Y.

Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316

WASSENBERG, PINKY S.

The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
PB81-138166 1367

WASSON, WARREN JAMES

Detailed Design of the Kernel of a Real-Time Multiprocessor Operating System.
AD-A092 301/1 1356

WATERBURY, S. S.

Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

WATERMAN, THOMAS E.

Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396

WATERS, M. H. L.

Research on Energy Conservation for Cars and Goods Vehicles,
PB81-129090 1363

WATERS, RICHARD C.

A Hypothetical Monologue Illustrating the Knowledge Underlying Program Analysis.

AD-A092 294/8 1356

WATERSTRAT, R. M.
Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372

WATKINS, WILLIAM A.
Reprint: Acoustics and the Behavior of Sperm Whales.
AD-A092 082/7 1340

Reprint: Click Sounds from Animals at Sea.
AD-A092 064/5 1340

Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340

WATSON, J. M.
Rapporteur Talk for IAEA Fusion Meeting, Brussels.
LBL-11429 1417

WATSON, JAMES
A Survey of Computer Simulations of Digital Avionics Systems.
AD-A091 943/1 1288

WATSON, W. I.
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300

WATTEN, R. H.
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

WAYNE, R. J.
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440

WEART, W. D.
Technical Developments in the WIPP Program.
SAND-80-1599C 1425

WEAVER, J. H.
3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336

WEBB, D. C.
Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351

WEBB, J. D.
Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
AD-A092 333/4 1334

Reprint: On the Jahn-Teller Effect in ReF6.
AD-A092 334/2 1334

Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
AD-A092 119/7 1333

Reprint: Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State.
AD-A092 335/9 1334

WEBB, JOSEPH G. JR.
A Comparison of the Inflammatory Response Produced by Commercial Eugenol and Purified Eugenol,
AD-A091 901/9 1325

WEBB, WILLIE M.
Control, Decontamination and Disposal of Mercury.
AD-A092 453/0 1328

WEBER, E. J.
Reprint: Airborne Studies of Equatorial F Layer Ionospheric Irregularities.
AD-A092 006/6 1293

WEBER, J.
SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
LYCEN-7923 1451

WEBER, RICHARD WINSLOE
An Attempt to Model the USN Unrestricted Line Officer Promotion Process Using an Adapted Length of Service Markov Model.
AD-A092 403/5 1305

WEBSTER, JAMES A.
Separation of Triphenylphosphine Oxide from Methotrexate Ester and Purification of Said Ester.
PAT-APPL-6-143 129 1338

WEBSTER, PAUL
Momentum Distribution of Ions in Plasma Beam.
AD-A092 385/4 1447

WEDEMEYER, GARY A.
Reprint: Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
PB81-120685 1340

WEIDLINGER, PAUL
Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
PB81-122533 1393

WEIDNER, HAL E.
Manufacturing Methods and Technology Program Accomplishments.
AD-A092 262/5 1390

WEINDORF, J. W.
Basic Graphical Data Management System (BAGDAMS Version 1.0). User's Guide and Reference Handbook.
AECL-6487 1356

WEINER, DONALD D.
Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358

Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

WEINER, E. O.
Seismic Transient Analysis of a Containment Vessel with Penetrations.
HEDL-SA-1955 1428

WEINGARTEN, D. H.
Theoretical Particle Physics. Progress Report, December 1, 1079-November 30, 1980.
DOE/ER/02009-140 1443

WEINSTEIN, CLIFFORD J.
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
AD-A092 113/0 1408

WEINSTEIN, EHUD
Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406

WEISS, A. J.
Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424

WEISS, G. H.
Reprint: Internal Configurations of Span-Constrained Random Walks,
PB81-126179 1377

WEITL, F. L.
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332

WELCH, BRYANT E.
Concept Evaluation: Field Feedback Computation of Electromagnetic Scattering.
AD-A092 305/2 1452

WELCH, D. O.
Bend Strain Tolerances of a Nb sub 3 Sn Conductor Proposed for Use in the Magnetic Fusion Energy Program.
BNL-28375 1414

WELCH, J. C.
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403

WELCH, MICHAEL J.
Reprint: Developing Definitive Methods for Human Serum Constituents--A Progress Report from the CAP (College of American Pathologists) NBS Research Associate,
PB81-133316 1326

WELLS, JOHN T.
Reprint: High-Precision Instrumentation System for Sea-Bed Pressure Measurements in Muddy Sediments.
AD-A091 974/6 1348

WELSH, B. L.
A New Angular Displacement Transducer.
AD-C019 184/1 1396

WENDEL, G. W.
Skyline Harvesting in Appalachia.
PB81-134173 1291

WENGERT, EUGENE M.
Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291

WERLEY, K. A.
Design Considerations for a Steady State Fusion Reactor's Thermal Energy Dump (TED) With Emphasis on SAFFIRE.
COO-2218-182 1415

WEST, DOUGLAS B.
Semiantichains and Unichain Coverings in Direct Products of Partial Orders.
AD-A092 256/7 1377

WEST, E. J.
Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

WEST, F. G.
Magnetic Bubble Research.
AD-B002 919/9 1437

WEST, KENNETH O.
Yaw Card Range Tests of a 30mm Frangible TP Projectile.
AD-B013 355/3 1432

Yaw Card Range Tests of a 30mm Target Projectile.
AD-B014 108/5 1432

WESTINE, PETER S.
Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436

WHARTON, LENNARD
Gas Surface Dynamics, High Power Laser-Solid Interactions.
AD-A092 183/3 1333

WHATLEY, JAMES C.
Program Planning and Appraisal Methodology.
AD-B027 872/1 1297

WHEELER, R. L.
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

WHICKER, F. W.
Radioecological Investigations of Uranium Mill Tailings Systems. Progress Report, September 1, 1979-September 30, 1980.
DOE/EV/10305-1 1426

WHITE, CHARLES R.
Maintenance Productivity.
AD-A092 250/0 1296

WHITE, D. C.
Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316

WHITE, HENRY S.
On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 956/9 1333

WHITE, J. M.
On the Photoassisted Hydrogen Production from Titania and Water.
AD-A092 223/7 1333

Photocatalytic Reaction of Water with Carbon over Platinized Titania.
AD-A092 222/9 1333

WHITLOCK, R. R.
Preheat Studies on Laser Ablatively-Accelerated Foils.
NRL-MR-4356 1417

WHITTIER, A. J.
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300

WIEDEMAN, ROBERT A.
Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/3 1379

WIEDEMANN, C. M.
Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292

WIEDERHORN, S. M.
Reprint: Effect of Particle Impact Angle on Strength Degradation of Glass.
PB81-121493 1368

Reprint: Strength Degradation of Glass Impacted with Sharp Particles: I, Annealed Surfaces.
PB81-121527 1368

Reprint: Thermal Effects in Sharp-Particle Contact.
PB81-119851 1367

WILCOX, H. A.
Nonresonant Acoustic Projector Project. Mechanical 5-50 Hz Device Provides Stable Underwater Acoustic Output with Frequency and Amplitude Controllable and Independent of Depth.
AD-A092 181/7 1408

WILCOX, J. M.
Reprint: Origin of the Warped Heliospheric Current Sheet.
AD-A091 898/7 1292

WILDING, M. W.
Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423

WILKINS, DARIN E.
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435

WILKINS, J. D.
The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
PB81-120172 1388

WILKINSON, RONALD C.
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292

WILLETT, COLIN S.
Unstable-Resonator and Output-Coupling Design Study for Diffraction Radiation Generator Near-Millimeter Sources.
AD-A092 502/4 1439

WILLIAMS, G. J.
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407

WILLIAMS, JOHN J.
National Dam Safety Program. Lookover Lake Dam (NJ00565), Hudson River Basin, Longhouse Brook, Passaic, County, New Jersey. Phase I Inspection Report.
AD-A092 218/7 1381

WILLIAMS, K. E.
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303

Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304

WILLIAMS, M. L.
Developments in Sensitivity Theory.
CONF-800942-10 1430

WILLIAMS, P. F.
Studies of Transient Discharges.
AD-A092 482/9 1437

WILLIAMS, R. L.
Fuel Valve.
PAT-APPL-6-187 646 1455

WILLIAMS, RAYMOND D.
Reprint: Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance.
AD-A092 048/8 1308

WILLIAMS, VINCENT PRYCE
Electric Gel Slicer.
PAT-APPL-6-174 239 1396

WILLIAMS, W. R.
State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393

WILLIAMSON, DONALD R.
USAWC Coronary Risk and Fitness Analysis.
AD-A092 209/6 1318

WILNER, E.
Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
IFUSP-P-180 1448

WILSEY, N. D.
Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

WILSON, D. G.
Composition of Solidified Binary Alloy from a Simple Solidification Model.
ORNL/CSD-66 1371

WILSON, E. A.
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412

WILSON, KENT R.
Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333

WIRE, G. L.
State Variable Description of 316 SS Post-Irradiation Mechanical Properties.
HEDL-SA-2174 1429

WIRTHLIN, M. R.
Reprint: Influence of Interdental Contacts on Periodontal Status.
AD-A092 425/8 1319

WISE, D. L.
Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

WITIAK, DONALD T.
Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
AD-A092 249/2 1328

WITSBERGER, CHRISTINA
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139172 1312

Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139420 1314

WITTEKIND, W. D.
Ultrasonic Flowmeters: A Progress Report.
UNI-TR-4 1398

WITTMEYER, JAMES F. III.
The Design, Development, Demonstration and Transfer of Advanced Command and Control (C2) Computer-Based Systems.
AD-A092 293/0 1356

WITUS, GARY
Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408

Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408

Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408

User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403

WITZE, P. O.
Influence of Air Motion Variation on the Performance of a Direct-Injection Stratified-Charge Engine.
SAND-79-8756 1456

WLODYKA, L.
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

WOESSNER, JAMES KEIL
Determination of the Systematic Bias and Variability of the Error of the National Meteorological Center's Six-Layer Baroclinic Model.
AD-A092 372/2 1295

WOHLERS, R. J.
Error Analysis of Ruby Radar Cross Section Measurement System.
AD-A950 100/8 1413

WOLF, M. A.
Analysis of Baseline Data from Federally Leased Oil Shale Tracts in Colorado and Utah.
DOE/EV/70031-5 1383

WOLFE, N. LEE
Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324

WOLFE, W. P.
Effects of Flow Curvature on the Aerodynamics of Darrieus Wind Turbines.
ORO-5135-77/7 1362

WOLFSON, ROBERT G.
HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450

WOLTERS, W.
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

WOMACK, DENNIS R.
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439

WONG, KENNETH
Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139073 1311

Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139180 1312

Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139263 1313

WONG, Y. H.
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396

WOOD, E. C.
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394

WOODALL, H. C.
Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391

WOODHOUSE, J. J.
Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

WOODRUFF, KENNETH
Voice Countermeasures Effectiveness Analysis.
AD-912 392/8 1410

WOODS, D. R.
MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan,
AD-A092 267/4 1304

MAGLAD. Trainer Engineering Report Demonstration Results.
AD-A092 477/9 1305

WOODWARD, JACK L.
Steering System Survey for Surface Mining Equipment.
PB81-130866 1348

WORLEY, H. EUGENE
Guidance and Control of Anti-Tactical Ballistic Missiles.
AD-A092 015/7 1400

WRIGHT, H. E. JR.
A Trophic Classification of Minnesota Lakes Based on Lake Sediments.
PB81-124141 1343

WRIGHT, JAMES E.
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets.
AD-A092 359/9 1324

WRIGHT, R. R.
Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391

WRIGHT, R. S.
Prediction of Concentration Profiles for a NiMCIX Column Absorbing Uranium from Aqueous Solution.
PER-26 1430

WRIGHT, VIRGINIA
Bus Driver Training Simulator Assessment.
PB81-128977 1307

WU, ANGELA Y.
Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354

WU, K. F.
ETF System Code: Composition and Applications.
CONF-801011-5 1415

WU, Y. S.
Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
AD-912 790/3 1360

Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
AD-912 791/1 1360

WYATT, WILLIAM T. JR.
A Near-Surface Burst EMP Driver Package for Neutron-Induced Sources.
AD-A091 908/4 1421

WYCKOFF, THOMAS GENE
The Legacy of Ideology in Soviet Foreign Policy Toward the West.
AD-A092 283/1 1302

WYE, CHRISTOPHER
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study,
PB81-138968 1310

WYSZEWIANSKI, LEON
Determinants and Effects of Organizational Strategies of Control Directed at Quality of Care in Organized Ambulatory Care Settings.
PB81-133613 1322

YAGI, H.
Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420

YAGI, K.
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

YANG, J. W.
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427

YANG, PHILIP SHING-HWA
The Modernization of the Chinese People's Liberation Army: Goals and Problems.
AD-A092 422/5 1400

YANG, T. Y.
A Finite Element Mach Box Procedure for Flutter Predictions of Panels in Three-Dimensional Supersonic Unsteady Potential Flow.
AD-B017 944/0 1438

YARRINGTON, R. M.
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
DOE/ET/15383-18 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
DOE/ET/15383-22 1364

Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364

YASU, S.
Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.

PNCT-841-79-05 1430

YATES, A. DAVID

Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,
PB81-139016 1310

YEATER, M. L.

Development and Testing of a Model for Fire Potential in Nuclear Power Plants.
NUREG/CR-1819 1422

YEH, G. T.

FEMWATER: A Finite-Element Model of Water Flow Through Saturated-Unsaturated Porous Media.
ORNL-5567 1343

YEH, HUGH Y. H.

Dynamic Hull and Propeller Interaction Factors for FF-1052 Predicted from Quasi-Steady Model Experiments.
AD-A091 890/4 1392

YEH, J. L.

Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

YESAVAGE, V. F.

Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, April-June 1979 and July-September 1979.
DOE/ET/13395-1/2 1453

Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, April-June 1980.
DOE/ET/13395-5 1453

Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, July-September 1980.
DOE/ET/13395-6 1453

YESKE, R. A.

Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
AD-A092 186/6 1369

YORK, THOMAS M.

Comparison of Electron Densities in the Middle Atmosphere Indicated by Rocket Borne Probing Techniques.
AD-A092 503/2 1294

YOSHIDA, Y.

Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424

YOSHIHARA, HIDEO

High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
AD-886 531/3 1289

YOSHIKAWA, S.

Impurity Ions in a Rotating Tokamak.
PPPL-1710 1434

Ion Cyclotron Heating of Plasmas with Two-Ion Components.
PPPL-1713 1418

YOUNG, A. J.

Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327

YOUNG, MARY E.

The Elderly: Social, Health, and Transportation Problems and Services. September, 1979-December, 1980 (Citations from the NTIS Data Base).
PB81-801581 1315

The Elderly: Social, Health, and Transportation Problems and Services. 1978-August, 1979 (Citations from the NTIS Data Base).
PB81-801573 1315

YOUNG, P. G.

Applied Nuclear Data Research and Development. Progress Report, April 1-June 30, 1980.
LA-8524-PR 1445

YOUNG, ROGER S.

Advanced Fire Extinguishers for Aircraft Habitable Compartments.
AD-B044 225/1 1289

YUST, C. S.

Observation of Dislocations and Twins in Explosively Compacted Alumina.
CONF-800641-7 1367

YUZEVICH, YU. V.

Ways for Providing a High-Speed Analog-to-Digital Converter with Wide Dynamic Range--Translation.
AD-A092 099/1 1359

ZACHARY, WAYNE W.

Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.
AD-A091 956/3 1308

ZAJTCHUK, RUSS

Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

ZALOUDEK, F. R.

Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379

ZAMANZADEH, M.

Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

ZARDECKI, A.

Reprint: Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions.
AD-A092 051/2 1440

ZASTAVENKO, L. G.

Suggestion About the Absence of the Phase Transition, Vacuum Degeneration, Spontaneous Symmetry Breaking and Zero-Mass Goldstone-Bosons in QFT Models of the Type Gphi exp 4.
JINR-E-2-12637 1445

ZAYAS, VICTOR A.

Cyclic Inelastic Buckling of Tubular Steel Braces,
PB81-124885 1395

ZEGEER, CHARLES V.

Propagation of Traffic Noise.
PB81-123523 1389

ZENOBI, THOMAS J.

Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
AD-A092 292/2 1288

ZERNIKE, FRITS

Thin Film Optical Waveguide Technology.
AD-919 567/8 1352

ZERROUKI, A.

Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

ZHONG, JI

A 20 Years' Survey of Laser Science and Technology in China. II--Translation.
AD-A092 097/5 1439

ZHOU, XONG-XIN

Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

ZIARNO, JAMES A.

Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
PB81-130676 1386

ZIBIT, MELANIE

MC Painting Manual A: User's Guide. The Illinois Series on Educational Applications of Computers, No. 33. Revised Edition,
ED-183 201 1306

ZIERMAN, CARL A.

Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/8 1379

ZIMMERMAN, BARRY L.

Infrared Thermometry and the Telatemp 44 as a Ship System Maintenance Monitoring Tool.
AD-B018 764/1 1393

ZONARS, DEMETRIOUS

High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
AD-886 531/3 1289

ZUCKERMAN, J. J.

Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

ZUKER, A. P.

Quasiconfigurations: An Approach to Effective Forces.
CRN-PN-78-26 1443

ZWIES, ALFRED

Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
PAT-APPL-6-195 188 1396

CORPORATE AUTHOR INDEX

NTIS®

In this index, the name of the company, university, or government agency that performed the research or prepared the report is listed. Entries are arranged first by the organization's name, then alphanumerically by the performing organization report or series number. If no report or series number is included, the subarrangement is by NTIS order number.

SAMPLE ENTRY

MASSACHUSETTS INST. OF TECH., CAMBRIDGE CONSTRUCTED FACILITES DIV.
R79-12
Computation of Hankel Transforms Using the Fast-Fourier Transform Algorithm,
(NSF/RA-790206)
PB80-104045 33

Corporate or Performing organization

Report or series number
Title

(Sponsor's report or series number)
NTIS order number Page number

AAI CORP., COCKEYSVILLE, MD.
AAI-ER-8296
Development of a Thin-Wall 20mm Explosive Projectile.
(AFATL-TR-75-76)
AD-B007 705/7 1432

AAI-ER-8939
Development of a Lightweight 25mm Explosive Projectile.
(AFATL-TR-77-83)
AD-B026 541/3 1433

ABACUS PROGRAMMING CORP SANTA MONICA CALIF
APC-R-0070/09/00/00
The Improved JCVS.
(RADC-TR-74-232)
AD-923 431/1 1356

ABT ASSOCIATES, INC., CAMBRIDGE, MA.
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
(DHHS/PUB/HCFA-80/03057)
PB81-124687 1320

ADJUTANT GENERAL'S OFFICE (ARMY), WASHINGTON, DC.
Lessons Learned, Headquarters, Fort Buckner.
(OACSFOR-OT-UT-683362)
AD-845 654/3 1403

Lessons Learned, Headquarters, 63D Signal Battalion.
(OACSFOR-OT-UT-683151)
AD-845 655/0 1403

Lessons Learned, 4-68. Communications and Electronics Lessons Learned.
(OACSFOR-OT-RD-4-68)
AD-855 117/8 1403

Lessons Learned, Headquarters, 93rd Engineer Battalion.
(OACSFOR-OT-UT-692113)
AD-855 273/9 1403

Lessons Learned, Headquarters, 36th Engineer Battalion.
(OACSFOR-OT-UT-692117)
AD-855 322/4 1403

Lessons Learned, Headquarters, 164th Aviation Group.
(OACSFOR-OT-UT-692178)
AD-855 356/2 1403

Lessons Learned, Headquarters, 299th Engineer Battalion.
(OACSFOR-OT-UT-692267)
AD-855 547/6 1403

Lessons Learned, Headquarters, 169th Engineer Battalion.
(OACSFOR-OT-UT-692319)
AD-855 561/7 1403

Lessons Learned, Headquarters, 3D Battalion,506th Infantry.
(OACSFOR-OT-UT-692039)
AD-855 651/6 1403

Lessons Learned, Headquarters, I Corps Tactical Zone Signal Group.
(OACSFOR-OT-UT-692185)
AD-855 695/3 1403

Lessons Learned, Headquarters, 84th Engineer Battalion.
(OACSFOR-OT-UT-692087)
AD-855 900/7 1403

Lessons Learned, Headquarters, 588th Engineer Battalion.
(OACSFOR-OT-UT-692079)
AD-855 901/5 1403

Lessons Learned, Headquarters, 31st Engineer Battalion.
(OACSFOR-OT-UT-692141)
AD-856 079/9 1403

Lessons Learned, Headquarters, 20th Engineer Battalion.
(OACSFOR-OT-UT-692288)
AD-856 118/5 1404

Lessons Learned, Headquarters, 577th Engineer Battalion.
(OACSFOR-OT-UT-692320)
AD-856 164/9 1404

Lessons Learned, Headquarters, 116th Engineer Battalion.
(OACSFOR-OT-UT-692176)
AD-856 367/8 1404

Lessons Learned, Headquarters, 46th Engineer Battalion.
(OACSFOR-OT-UT-692330)
AD-856 713/3 1404

Lessons Learned Review of the HQ USEUCOM Command Center Project.
(OACSFOR-OT-UT-692348)
AD-856 745/5 1404

Lessons Learned, Headquarters, 34th General Support Group.
(OACSFOR-OT-UT-692177)
AD-856 914/7 1404

Lessons Learned, Headquarters, 92nd Engineer Battalion.
(OACSFOR-OT-UT-692331)
AD-857 032/7 1404

Lessons Learned, Headquarters, 165th Aviation Group.
(OACSFOR-OT-UT-692243)
AD-857 128/3 1404

Lessons Learned, Headquarters, 160th Signal Group.
(OACSFOR-OT-UT-691256)
AD-857 482/4 1404

Lessons Learned, Headquarters, 815th Engineer Battalion (Construction).
(OACSFOR-OT-UT-692266)

AD-857 603/5 1404

Lessons Learned, Headquarters, 64th Quartermaster Battalion.
(OACSFOR-OT-UT-692007)
AD-858 376/7 1404

Lessons Learned, Headquarters, 394th Transportation Battalion.
(OACSFOR-OT-UT-692352)
AD-858 543/2 1404

Lessons Learned, Headquarters, 972d Signal Battalion.
(OACSFOR-OT-UT-691227)
AD-858 938/4 1404

Lessons Learned, Headquarters, U. S. Army Depot Long Binh.
(OACSFOR-OT-UT-692301)
AD-858 944/2 1404

Lessons Learned, Headquarters, United States Army, Pacific.
(OACSFOR-OT-UT-693007)
AD-858 945/9 1404

Lessons Learned, Headquarters, 184th Ordnance Battalion (Ammo).
(OACSFOR-OT-UT-692292)
AD-859 175/2 1404

Lessons Learned, Headquarters, 125th Transportation Command.
(OACSFOR-OT-UT-692143)
AD-859 256/0 1404

Lessons Learned, Headquarters, 70th Engineer Battalion.
(OACSFOR-OT-UT-692175)
AD-859 267/7 1404

Lessons Learned, Headquarters, 2d Logistical Command.
(OACSFOR-OT-UT-692353)
AD-859 278/4 1404

Lessons Learned, Headquarters 4th Transportation Command.
(OACSFOR-OT-UT-692297)
AD-859 308/9 1404

Lessons Learned, Headquarters, 809th Engineer Battalion (Construction).
(OACSFOR-OT-UT-692354)
AD-859 333/7 1404

Lessons Learned, Headquarters, Army Depot, Cam Ranh.
(OACSFOR-OT-UT-692018)
AD-859 337/8 1404

Lessons Learned, Headquarters, 79th Engineer Group, (Construction).
(OACSFOR-OT-UT-692342)
AD-859 379/0 1404

Lessons Learned, Headquarters, 24th Transportation Battalion (Terminal).
(OACSFOR-OT-UT-692022)
AD-859 381/6 1404

Lessons Learned, Headquarters, 14th Transportation Battalion.
(OACSFOR-OT-UT-692273)
AD-859 526/6 1404

Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
(OACSFOR-OT-UT-692173)
AD-859 530/8 1404

Lessons Learned, Headquarters, U. S. Army Depot, Qui Nhon.
(OACSFOR-OT-UT-692302)
AD-859 531/6 1404

Lessons Learned, Headquarters, 124th Transportation Command (Terminal A).
(OACSFOR-OT-UT-692223)
AD-859 596/9 1405

Lessons Learned, Headquarters, 35th Engineer Group (Construction).
(OACSFOR-OT-UT-692215)
AD-859 837/7 1405

Lessons Learned, Headquarters 44th Engineer Group (Construction).
(OACSFOR-OT-UT-692355)
AD-859 902/9 1405

Lessons Learned, Headquarters 507th Transportation Group (Movement Control).
(OACSFOR-OT-UT-692349)
AD-859 903/7 1405

Lessons Learned, Headquarters, 538th Engineer Battalion.
(OACSFOR-OT-UT-692351)
AD-859 909/4 1405

Lessons Learned, Headquarters, 864th Engineer Battalion (Construction).
(OACSFOR-OT-UT-692174)
AD-859 926/8 1405

Lessons Learned, Headquarters, U. S. Army Headquarters Area Command.
(OACSFOR-OT-UT-693187)
AD-859 944/1 1405

Lessons Learned, Headquarters, Da Nang Signal Battalion.
(OACSFOR-OT-UT-692217)
AD-860 083/5 1405

Lessons Learned, Headquarters, 9th Logistical Command.
(OACSFOR-OT-UT-692016)
AD-860 216/1 1405

Lessons Learned, Headquarters, 44th Medical Brigade.
(OACSFOR-OT-UT-693188)
AD-860 217/9 1405

Lessons Learned, Headquarters, 63rd Signal Battalion (Army).
(OACSFOR-OT-UT-692218)
AD-860 218/7 1405

Lessons Learned, Headquarters, 20th Engineer Battalion.
(OACSFOR-OT-UT-693070)
AD-860 344/1 1405

Lessons Learned, Headquarters, 31st Engineer Battalion.
(OACSFOR-OT-UT-693278)
AD-860 345/8 1405

Lessons Learned, Headquarters, 34th Engineer Battalion.
(OACSFOR-OT-UT-693254)
AD-860 346/6 1405

Lessons Learned, Headquarters, 35th Engineer Battalion.
(OACSFOR-OT-UT-693052)
AD-860 347/4 1405

Lessons Learned, Headquarters, USASTRATCOM Facility Nha Trang.
(OACSFOR-OT-UT-692230)
AD-860 348/2 1303

Lessons Learned, Headquarters, 68th Medical Group.
(OACSFOR-OT-UT-693258)
AD-860 461/3 1405

Lessons Learned, Headquarters, 84th Engineer Battalion.
(OACSFOR-OT-UT-693036)
AD-860 632/9 1405

Lessons Learned, Headquarters, 41st Signal Battalion.
(OACSFOR-OT-UT-692192)
AD-860 678/2 1405

Lessons Learned, Headquarters, Phu Lam Signal Battalion.
(OACSFOR-OT-UT-692228)
AD-860 742/6 1405

Lessons Learned, Headquarters, 165th Aviation Group.
(OACSFOR-OT-UT-693257)
AD-861 029/7 1405

Lessons Learned, Headquarters, 62d Engineer Battalion.
(OACSFOR-OT-UT-693285)
AD-861 030/5 1405

Lessons Learned, Headquarters, 34th Engineer Group.
(OACSFOR-OT-UT-693286)
AD-861 031/3 1405

Lessons Learned, Headquarters, 43d Signal Battalion.
(OACSFOR-OT-UT-692194)
AD-861 032/1 1405

Lessons Learned, Headquarters, 36th Signal Battalion.
(OACSFOR-OT-UT-691225)
AD-861 033/9 1405

Lessons Learned, Headquarters, 52d Signal Battalion.
(OACSFOR-OT-UT-692208)
AD-861 474/5 1405

Lessons Learned, Headquarters, 3d Surgical Hospital.
(OACSFOR-OT-UT-693042)
AD-861 493/5 1405

Lessons Learned, Headquarters, 3d Field Hospital.
(OACSFOR-OT-UT-693041)
AD-861 494/3 1406

Lessons Learned, Headquarters, US Army Regional Communications Group (Vietnam).
(OACSFOR-OT-UT-692214)
AD-861 495/0 1406

Lessons Learned, Headquarters, 1st Signal Brigade (USASTRATCOM).
(OACSFOR-OT-UT-693297)
AD-861 496/8 1406

Lessons Learned, Headquarters, 45th Surgical Hospital.
(OACSFOR-OT-UT-693120)
AD-861 505/6 1406

Lessons Learned, Headquarters, 29th Evacuation Hospital.
(OACSFOR-OT-UT-693045)
AD-861 512/2 1406

Lessons Learned, Headquarters, 29th Signal Group.
(OACSFOR-OT-UT-692233)
AD-861 521/3 1406

Lessons Learned. Headquarters, 19th Engineer Battalion (Combat).
(OACSFOR-OT-UT-693110)
AD-861 529/6 1406

Lessons Learned. Headquarters, 27th Engineer Battalion (Combat).
(OACSFOR-OT-UT-693113)
AD-861 530/4 1406

Lessons Learned. Headquarters, 12th Signal Group.
(OACSFOR-OT-UT-693182)
AD-861 531/2 1406

Lessons Learned. Headquarters, 2nd Civil Affairs Company.
(OACSFOR-OT-UT-693210)
AD-861 532/0 1406

Lessons Learned. Headquarters, US Army STRATCOM Long Lines Battalion North.
(OACSFOR-OT-UT-692229)
AD-861 538/7 1406

Lessons Learned, Headquarters, 40th Signal Battalion (Construction).
(OACSFOR-OT-UT-692250)
AD-861 633/6 1406

Lessons Learned, Headquarters, 70th Engineer Battalion.
(OACSFOR-OT-UT-693145)
AD-861 634/4 1406

Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
(OACSFOR-OT-UT-693148)
AD-861 636/9 1406

Lessons Learned, Headquarters, 169th Engineer Battalion.
(OACSFOR-OT-UT-693313)
AD-861 670/8 1406

Lessons Learned, Headquarters, 86th Engineer Battalion.
(OACSFOR-OT-UT-693055)
AD-861 777/1 1406

Lessons Learned, Headquarters, 538th Engineer Battalion.
(OACSFOR-OT-UT-693050)
AD-861 827/4 1406

Lessons Learned, Headquarters, 519th Transportation Battalion.
(OACSFOR-OT-UT-693080)
AD-861 828/2 1406

Lessons Learned, Headquarters, 29th Civil Affairs Company.
(OACSFOR-OT-UT-693017)
AD-861 834/0 1406

Lessons Learned, Headquarters, 41st Civil Affairs Company.
(OACSFOR-OT-UT-693180)
AD-861 915/7 1406

ADVANCED RESEARCH RESOURCES ORGANIZATION, WASHINGTON, DC.

ARRO-R79-8
Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305

ARRO-3038-FR
Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305

ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT, NEUILLY-SUR-SEINE (FRANCE).

AGARD-INDEX-77-79
AGARD Index of Publications, 1977 - 1979.
AD-A092 125/4 1402

AERODYNE RESEARCH, INC., BEDFORD, MA. CENTER FOR CHEMICAL AND ENVIRONMENTAL PHYSICS.

ARI-RR-174
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
(AFGL-TR-80-0049)
AD-A092 061/1 1333

SCIENTIFIC-2
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
(AFGL-TR-80-0049)
AD-A092 061/1 1333

AERODYNE RESEARCH, INC., BEDFORD, MA. CENTER FOR ELECTRO-OPTICAL SIGNATURE STUDIES.

ARI-RR-232
Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293

AERONAUTICAL RESEARCH ASSOCIATES OF PRINCETON, INC., NJ.

ARAP-147
Design Manual for Vertical Gusts Based on Power Spectral Techniques.
(AFFDL-TR-70-106)
AD-879 736/7 1289

AERONAUTICAL RESEARCH LABS., MELBOURNE (AUSTRALIA).

ARL/AERO-TM-318
An Improved Flight Data Transcriber.

AD-A091 981/1 1398

ARL/STRUC-TM-321
Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
AD-A091 962/1 1288

AEROSPACE CORP., EL SEGUNDO, CA.

TR-0081(6910)-1
Cost Estimating Procedure for Unmanned Satellites.
AD-A092 458/9 1457

AEROSPACE CORP., EL SEGUNDO, CA. MATERIALS SCIENCES LAB.

TR-0081(6950-05)-1
Deterioration of Superpolished Metal Mirrors by Blue Haze.
(SD-TR-80-74)
AD-A092 273/2 1370

AEROSPACE CORP., GERMANTOWN, MD.

ATR-80(8374)-1
Military Wastes-to-Energy Applications.
PB81-132227 1386

AIR FORCE AERO PROPULSION LAB., WRIGHT-PATTERSON AFB, OH.

AFAPL-TR-79-2077
Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454

AIR FORCE AEROSPACE MEDICAL RESEARCH LAB., WRIGHT-PATTERSON AFB, OH.

AFAMRL-TR-79-109
Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325

AIR FORCE ARMAMENT LAB., EGLIN AFB, FL.

AFATL-TR-75-86
Generating Weather Data for Linear Weapons Allocation Models.
AD-B021 970/9 1377

AFATL-TR-76-1
Yaw Card Range Tests of a 30mm Target Projectile.
AD-B014 108/5 1432

AFATL-TR-76-5
Yaw Card Range Tests of a 30mm Frangible TP Projectile.
AD-B013 355/3 1432

AFATL-TR-76-131
XM714 Delay Fuze Tests.
AD-B024 828/6 1433

AFATL-TR-77-50
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456

AIR FORCE AVIONICS LAB., WRIGHT-PATTERSON AFB, OH.

AFAL-TR-75-92
Variable Capacitance Electrostatic Energy Conversion System.
AD-B014 349/5 1363

AIR FORCE ENGINEERING AND SERVICES CENTER, TYNDALL AFB, FL. ENGINEERING AND SERVICES LAB.

AFESC/ESL-TR-80-32
Modal Analysis for Aircraft Response to Runway Surface Roughness.
AD-A092 057/9 1290

AIR FORCE FLIGHT DYNAMICS LAB., WRIGHT-PATTERSON AFB, OH.

AFFDL-TR-76-161
A Finite Element Mach Box Procedure for Flutter Predictions of Panels in Three-Dimensional Supersonic Unsteady Potential Flow.
AD-B017 944/0 1438

AIR FORCE FLIGHT TEST CENTER, EDWARDS AFB, CA.

AFFTC-TIH-79-1
USAF Test Pilot School. Flight Test Handbook. Performance. Theory and Flight Techniques. Chapters 1 through 9.
AD-A091 990/2 1303

AIR FORCE GEOPHYSICS LAB., HANSCOM AFB, MA.

AFGL-AFSG-428
Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

AFGL-ERP-711
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

AFGL-TR-80-0209
Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456

AFGL-TR-80-0222
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293

AFGL-TR-80-0295
Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 878/9 1292

AFGL-TR-80-0310
Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295

AFGL-TR-80-0311
Reprint: Long-Term Measurements in C2n in the Boundary Layer.
AD-A092 427/4 1295

AFGL-TR-80-0312
Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295

AFGL-TR-80-0318
Reprint: Seasonal and Solar Cycle Variations of Equatorial Spread-F in the American Zone.
AD-A092 083/5 1293

AFGL-TR-80-0320
Reprint: Airborne Studies of Equatorial F Layer Ionospheric Irregularities.
AD-A092 006/6 1293

AFGL-TR-80-0322
Reprint: Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment.
AD-A092 005/8 1440

AFGL-TR-80-0325
Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292

Reprint: The Dissociation Energies of Gaseous Praseodymium- and Neodymium-Monoxides and Their Structure.
AD-A092 488/6 1334

AIR FORCE INST. OF TECH., WRIGHT-PATTERSON AFB, OH.

AFIT-CI-79-199T
Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
AD-A092 054/6 1296

AFIT-CI-79-235D
Efficient Coding of the Prediction Residual.
AD-A092 198/1 1408

AFIT-CI-80-1D
A Composite Algorithm for Mixed Integer Constrained Nonlinear Optimization.
AD-A092 435/7 1378

AFIT-CI-80-3D
A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293

AFIT-CI-80-4T
Analysis of a Simulated Source of Electromagnetic Pulses.
AD-A092 440/7 1452

AFIT-CI-80-9T
Diagnostic Software Development for a Real-Time Spectral Analysis System.
AD-A092 441/5 1356

AFIT-CI-80-10T
The Effects of the Direction of Control Loading on a One-Dimensional Tracking Task.
AD-A092 459/7 1288

AFIT-CI-80-11T
Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
AD-A092 318/5 1413

AFIT-CI-80-14T
Fatigue in Graphite/Epoxy Bolted Joints.
AD-A092 362/3 1388

AFIT-CI-80-15T
Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
AD-A092 419/1 1334

AFIT-CI-80-16T
A New Computer Program for Plant Layout Design - OPDEP Optimal Plant Design and Evaluation Program.
AD-A092 363/1 1390

AFIT-CI-80-17T
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290

AFIT-CI-80-20T
Environmental Influences in the Simulation of a Solar Space Heating System.
AD-A092 436/5 1378

AFIT-CI-80-21D
A New Horizontal Gradient, Continuous Flow, Ice Thermal Diffusion Chamber and Detailed Observation of Condensation-Freezing and Deposition Nucleations.
AD-A092 479/5 1294

AFIT-CI-80-22D
A Feasibility Study for Advanced Technology Integration for General Aviation.
AD-A092 437/3 1289

AFIT-CI-80-30D
Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287

AFIT-CI-80-31D
Dynamic Interactions between the Troposphere and Stratosphere.
AD-A092 420/9 1295

AFIT-CI-80-39T
Kinematic Features of the Large-Scale Mean State Phase II of Gate and Comparison with Phase III Features.
AD-A092 444/9 1295

AFIT-CI-80-40T
Determination of the Systematic Bias and Variability of the Error of the National Meteorological Center's Six-Layer Baroclinic Model.
AD-A092 372/2 1295

AFIT-CI-80-41T
Considerations for an Assembler Scheduled Multi-Microprocessor System.
AD-A092 216/1 1355

AFIT-CI-80-42T
Comparative Histopathology of Acanthocephalan Infections in Some Freshwater Fishes.
AD-A092 258/3 1316

AFIT-CI-80-43T
The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
AD-A092 217/9 1294

AIR FORCE OCCUPATIONAL AND ENVIRONMENTAL HEALTH LAB., BROOKS AFB, TX.

OEHL-79-149
Control, Decontamination and Disposal of Mercury.
AD-A092 453/0 1328

OEHL-80-35
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326

AIR FORCE PACKAGING EVALUATION AGENCY, WRIGHT-PATTERSON AFB, OH.

PTPT-80-16
Evaluation/Redesign of the F-105 Pitch Rate Gyro Pack.
AD-A092 109/8 1412

AIR FORCE WEAPONS LAB., KIRTLAND AFB, NM.

AFWL-TR-79-193
QUANTA - Users Manual.
(AD-E200-607)
AD-A092 379/7 1403

AFWL-TR-80-19
Radiation Evaluation of the AM2901A Microprocessor.
(AD-E200-606)
AD-A092 415/9 1356

AKTIEBOLAGET ATOMENERGI, STUDSVIK (SWEDEN).

Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425

ALABAMA UNIV., UNIVERSITY.

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T1 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T2 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T3 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T4 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T5 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T6 1345

Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T7 1345

ALASKA AGRICULTURAL EXPERIMENT STATION, PALMER.

Revegetation of Alaskan Coal Mine Spoils. Progress Report.
DOE/EV/10256-1 1345

ALASKA POWER ADMINISTRATION, JUNEAU.

Annual Report, 1979.
DOE/TIC-11212 1362

ALASKA UNIV., FAIRBANKS. INST. OF ARCTIC BIOLOGY.

Reprint: Response to Fertilization by Various Plant Growth Forms in an Alaskan Tundra: Nutrient Accumulation and Growth.
(ARO-14169.2-L)
AD-A092 116/3 1316

ALEPH INC GARLAND TEX

73-AR-1
Some Applications of Hybrid Thick Film Technology.

(AFAL-TR-73-413)
AD-917 846/8 1360

AMERICAN CANCER RESEARCH CENTER AND HOSPITAL, LAKEWOOD, CO. DEPT. OF BASIC ONCOLOGY.

Study of the Mechanism of Carcinogenesis by Carcinogens Which Are Negative in the Ames Test. Progress Report.
DOE/EV/10100-02 1328

AMERICAN DENTAL ASSOCIATION, CHICAGO, IL.

Policies on Dental Health and Health Planning.
HRP-0902632/9 1320

AMERICAN SAMOA OFFICE OF MARINE RESOURCES, PAGO PAGO.

Reprint: The Efficiency of Mollies, 'Poecilia mexicana', as Live Bait for Pole-and-Line Skipjack Fishing: Fishing Trials in the Tropical Central Pacific, *(NOAA-80101509-2)*
PB81-120693 1316

AMHERST COLL., MA.

Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
DOE/ER/05031-2 1336

ANALYTIC SCIENCES CORP., READING, MA.

TASC-TR-316-4-2
Reduced-Order Estimators and Their Application to Aircraft Navigation.
(AFAL-TR-73-367)
AD-921 863/7 1412

ANALYTICS, INC., WILLOW GROVE, PA.

1366-B
Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.
AD-A091 956/3 1308

ARCTIC INST. OF NORTH AMERICA, ARLINGTON, VA.

Concepts for Data Collection in the Arctic.
AD-A092 476/1 1349

ARETE ASSOCIATES, INC., SANTA MONICA, CA.

AR-79-052-TR
Viscous Flow over Arbitrary Geometries at High Angle of Attack,
AD-A091 971/2 1438

ARGONNE NATIONAL LAB., IL.

Threatened and Endangered Fish and Wildlife of the Midwest.
ANL/EES-TM-101 1316

Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(Rev.1) 1441

ARINC RESEARCH CORP., ANNAPOLIS, MD.

Infrared Measurement Variability Analysis.
(JTCG/AS-79-C-003)
AD-A092 068/6 1411

ARIZONA UNIV., TUCSON.

31
Analytic Methods for the Approximate Solution of Singularly Perturbed Systems.
AD-A091 907/6 1375

ARMY ARCTIC TEST CENTER, APO SEATTLE 98733.

Check Test of Launcher, Grenade, 40mm, M203, under Arctic Winter Conditions.
AD-B004 403/2 1436

ARMY ARMAMENT MATERIEL READINESS COMMAND ROCK ISLAND IL COST ANALYSIS DIV

DRSAR-CPE-77-9
Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436

ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND, ABERDEEN PROVING GROUND, MD. BALLISTICS RESEARCH LAB.

ARBRL-MR-02896
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
(SBIE-AD-E430281)
AD-B040 233/9 1435

ARBRL-MR-03060
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
(AD-E430-531)
AD-A092 375/5 1432

ARBRL-MR-03065
Tank Wars General Information Manual.
(AD-E430-540)
AD-A092 350/8 1434

ARBRL-SP-00016
A Congeries of Numerical Models used at the BRL.
(AD-E430-523)
AD-A091 886/2 1434

ARBRL-TR-02262
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
(AD-E430-527)
AD-A092 376/3 1334

ARBRL-TR-02264
Strong Blast Wave Computer Programs.
(AD-E430-538)
AD-A092 346/6 1435

ARBRL-TR-02265
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
(AD-E430-534)
AD-A092 351/6 1436

ARBRL-TR-02266
WNDWBX: Tektronix Plotting on CDC.
(AD-E430-530)
AD-A092 377/1 1356

ARBRL-TR-02267
Plasma Dynamics of the Arc-Driven Rail Gun.
(AD-E430-539)
AD-A092 345/8 1395

ARBRL-TR-02269
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
(AD-E430-543)
AD-A092 349/0 1377

ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND, ABERDEEN PROVING GROUND, MD. CHEMICAL SYSTEMS LAB.

ARCSL-TR-79002
Survey of Decontamination Methods related to Field Decontamination of Vehicles and Materiel (Abridged).
(SBIE-AD-E410088)
AD-B031 659/6 1399

ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND, DOVER, NJ. LARGE CALIBER WEAPON SYSTEMS LAB.

ARLCD-SP-80006
Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
(AD-E400-484)
AD-A091 988/6 1431

ARLCD-SP-80007
Analytical Chemistry of 2,4,6-Trinitrotoluene.
(AD-E400-487)
AD-A092 348/2 1432

ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND, DOVER, NJ. TECHNICAL SUPPORT DIRECTORATE.

ARTSD-TR-80001
Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
(AD-E400-510)
AD-A092 347/4 1437

ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND, WATERVLIET, NY. LARGE CALIBER WEAPON SYSTEMS LAB.

ARLCB-TR-80038
Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
(AD-E440-095)
AD-A091 997/7 1450

ARMY CIVIL AFFAIRS SCHOOL, FORT GORDON, GA.

Civil Affairs Developments.
AD-A091 950/6 1303

ARMY COMBINED ARMS COMBAT DEVELOPMENTS ACTIVITY, FORT LEAVENWORTH, KS.

CACDA-TR-8-77
An HP-67 Combat Model.
AD-A091 992/8 1402

ARMY COMBINED ARMS STUDIES AND ANALYSIS ACTIVITY, FORT LEAVENWORTH, KS.

CASAA-TR-11-80
Army 86 Cost Sensitivity Analysis Verification.
AD-A091 889/6 1401

ARMY COMMAND AND GENERAL STAFF COLL., FORT LEAVENWORTH, KS.

Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
(AD-E750-037)
AD-A092 457/1 1349

US Military Hand Guns. Examination of Literature for the Last Twenty Years.
AD-B029 722/6 1436

ARMY ELECTRONICS COMMAND, FORT MONMOUTH, NJ.

A Methodology for Predicting Ammunition Requirements as a Function of Force Size.
AD-B013 302/5 1432

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND, FORT MONMOUTH, NJ. NIGHT VISION AND ELECTRO-OPTICS LABS.

Reprint: A Double-Ended, Unstable Resonator Submillimeter Laser.
AD-A092 044/7 1439

ARMY ENGINEER DIV. NEW ENGLAND, WALTHAM, MA.

Boston Harbor, Massachusetts Main Report for Debris Removal. Volume I. Revision.
AD-A092 396/1 1382

Boston Harbor, Massachusetts Feasibility Report for Debris Removal. Volume 2. Part A-Debris Inventory. Summary Sheets. Part B - Land Enhancement. Summary Sheets. Revision.
AD-A092 397/9 1382

Final Environmental Impact Statement on Debris Removal from Boston Harbor, Massachusetts. Revision.
AD-A092 398/7 1382

ARMY ENGINEER WATERWAYS EXPERIMENT STATION, VICKSBURG, MS.

AEWES-Misc-Paper-S-69-11-2
Expedient Surfacing and Drainage of Roads, Streets, and Parking and Storage Areas in Theater of Operations. Report 2. Tests Conducted Between August 1968 and July 1969,
AD-907 934/4 1382

Corps of Engineers Hydraulic Design Criteria. Volume I.
AD-A092 237/7 1382

Corps of Engineers Hydraulic Design Criteria. Volume 2.
AD-A092 238/5 1382

ARMY ENVIRONMENTAL HYGIENE AGENCY, ABERDEEN PROVING GROUND, MD.

USAEHA-75-51-0132-80
Physiological and Pharmacological Effects Following Oral Administration of Monopropellants, August 1978-September 1979.
AD-B042 976/1 1328

ARMY FACILITIES ENGINEERING SUPPORT AGENCY, FORT BELVOIR, VA. TECHNOLOGY SUPPORT DIV.

USAFESA-TS-2087
Laundry Heat Recovery, USMA, West Point.
AD-A092 060/3 1378

ARMY INDUSTRIAL BASE ENGINEERING ACTIVITY, ROCK ISLAND, IL.

Manufacturing Methods and Technology Program Plan, CY 1980.
AD-A092 243/5 1390

Manufacturing Methods and Technology Program Accomplishments,
AD-A092 262/5 1390

ARMY INFANTRY SCHOOL, FORT BENNING, GA.

Independent Evaluation Report for Platoon Early Warning System (PEWS-IER) AN/TRS-2( ).
AD-B023 039/1 1400

ARMY INST OF ADMINISTRATION, FORT BENJAMIN HARRISON IN.

Old Theories versus Changing Environment,
AD-A091 951/4 1308

ARMY INST. OF DENTAL RESEARCH, WASHINGTON, DC.

A Comparison of the Inflammatory Response Produced by Commercial Eugenol and Purified Eugenol,
AD-A091 901/9 1325

A Technique for Staining Extracted Teeth: A Research and Teaching Aid for Bleaching.
AD-A092 358/1 1319

Evaluation of a New Thermoplastic Gutta Percha Obturation Technique Using 45Ca.
AD-A092 391/2 1319

ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND, ALEXANDRIA, VA.

Department of Defense In-House RDT&E Activities.
AD-A092 321/9 1296

ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY, ABERDEEN PROVING GROUND, MD.

AMSAA-TM-127
The Delphi Technique and ITS Applicability to Army Systems Analyses.
AD-904 407/4 1378

ARMY MEDICAL RESEARCH INST. OF INFECTIOUS DISEASES, FREDERICK, MD.

Reprint: Endogenous Pyrogen Physiology.
AD-A091 896/1 1317

Reprint: Survival of Legionella pneumophila in Aerosols: Effect of Relative Humidity.
AD-A091 897/9 1317

Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317

Reprint: Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine.
AD-A091 900/1 1317

Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317

Reprint: Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study.
AD-A091 922/5 1317

Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318

Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
AD-A092 285/6 1325

A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
AD-A092 286/4 1318

The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
AD-A092 287/2 1318

ARMY MISSILE COMMAND, REDSTONE ARSENAL, AL. DIRECTED ENERGY DIRECTORATE.

DRSMI/RH-80-3-TR
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
(AD-E950-036)
AD-A091 883/9 1439

ARMY MISSILE COMMAND, REDSTONE ARSENAL, AL. GUIDANCE AND CONTROL DIRECTORATE.

DRSMI/RG-80-22
Field Evaluation of the LR80 Land Navigation System.
(AD-E950-035)
AD-A091 885/4 1412

ARMY MISSILE COMMAND, REDSTONE ARSENAL, AL. TECHNOLOGY INTEGRATION OFFICE.

DRSMI/RN-80-3-MR
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
(AD-E950-034)
AD-A091 884/7 1296

ARMY RESEARCH INST. FOR THE BEHAVIORAL AND SOCIAL SCIENCES, ALEXANDRIA, VA.

ARI-RR-1232
Soldier Satisfaction with Life in Restructured Units during Phase I of the Restructuring of the Heavy Division Test.
AD-A092 106/4 1308

ARMY RESEARCH INST. OF ENVIRONMENTAL MEDICINE, NATICK, MA.

USARIEM-M-12/80
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets.
AD-A092 359/9 1324

USARIEM-M-19/80
Sex Differences in Acclimation to a Hot-Dry Environment.
AD-A092 360/7 1327

USARIEM-M-29/80
Prediction of Energy Expenditure during Load Carriage at High Altitude.
AD-A092 361/5 1327

USARIEM-M-32/80
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality.
AD-A092 288/0 1327

ARMY SCIENCE BOARD, WASHINGTON, DC.

Ad Hoc Sub-Group Interim Report on National Training Center.
AD-A092 019/9 1303

1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375

Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403

ARMY TEST AND EVALUATION COMMAND, ABERDEEN PROVING GROUND, MD.

TOP-2-2-501
Swimming Tests of Wheeled and Tracked Vehicles.
AD-A092 393/8 1434

TOP-2-2-607
Cooling Systems (Automotive).
AD-A092 236/9 1434

TOP-3-2-503
Safety Evaluation of Fire Control Systems - Electrical and Electronic Equipment.
AD-A092 174/2 1435

TOP-6-2-551
Radiac Ratemeter Calibration Accuracy.
AD-A092 271/6 1421

TOP-6-2-562
Ratemeter Directional Dependence, Radiac.
AD-A092 235/1 1421

ARMY TRAINING AND DOCTRINE COMMAND, FORT MONROE, VA.

TRADOC-PAM-351-6
Job Performance Aid: Job and Task Analysis.
AD-A091 979/5 1303

ARMY TRAINING DEVELOPMENTS INST., FORT MONROE, VA.

Proceedings of the TRADOC/Training Developments Institute Chiefs of Anlaysis Seminar (4th) Held in Hampton, Virginia, 16-18 July 1980.
AD-A092 035/5 1304

ARMY WAR COLL., CARLISLE BARRACKS, PA.

USAWC Coronary Risk and Fitness Analysis.
AD-A092 209/6 1318

ARMY WAR COLL. STRATEGIC STUDIES INST., CARLISLE BARRACKS, PA.

Economic Sanctions in the 1990's,
AD-A092 201/3 1302

Futures Group Periodic Report-3,
AD-A092 202/1 1302

ARNOLD ENGINEERING DEVELOPMENT CENTER, ARNOLD AFS, TN.

AEDC-TR-75-149
Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
(AFATL-TR-75-141)
AD-B007 733/9 1438

AEDC-TR-75-163
Magnus and Roll-Damping Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
(AFATL-TR-75-159)
AD-B008 209/9 1434

AEDC-TR-77-59
Qualification Test of the Thiokol TE-M-364-19 Solid-Propellant Rocket Motor (S/N 19006).
AD-B018 629/6 1456

AEDC-TSR-79-P62
Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396

MHD High Performance Demonstration Experiment. Quarterly Progress Report, January 1-March 31, 1980.
FE-2895-8 1366

ASSISTANT SECRETARY OF THE NAVY (MANPOWER, RESERVE AFFAIRS AND LOGISTICS), WASHINGTON, DC.

OASN(M/RA/L)-RR-37
EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300

ASSOCIATION EURATOM-CEA SUR LA FUSION, CENTRE D'ETUDES NUCLEAIRES DE FONTENAY-AUX-ROSES (FRANCE). DEPT. DE PHYSIQUE DU PLASMA ET DE LA FUSION CONTROLEE.

CONF-790255-1
Research on TFR.
CEA-CONF-4696 1414

Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
EUR-CEA-FC-1013 1416

Comments on Various Derivative Methods of the Parametric Dispersion Relations.
EUR-CEA-FC-1014 1448

ASSOCIATION FOR THE STUDY OF MAN-ENVIRONMENT RELATIONS, INC., ARLINGTON, VA.

Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment,
(HUD-0001547)
PB81-139313 1313

Workshop on Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment. Workshop Framework and Paper Subjects,
(HUD-0001548)
PB81-139321 1313

ASSOCIATION OF SCHOOLS OF PUBLIC HEALTH, ARLINGTON, VA.

Schools of Public Health Trends in Graduate Education,
(DHHS/PUB/HRA-80-45)
HRP-0902582/6 1306

ASSOCIATION OF SWEDISH AUTOMOBILE MANUFACTURERS AND WHOLESALERS, STOCKHOLM.

Motor Vehicles and the Environment: Reply to UNEP (United Nations Environment Programme) Questionnaire.
PB81-130437 1389

ATMOSPHERIC AND ENVIRONMENTAL RESEARCH, INC., CAMBRIDGE, MA.

Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
(AFGL-TR-80-0343)
AD-A092 504/0 1294

ATOMIC ENERGY BOARD, PELINDABA, PRETORIA (SOUTH AFRICA).

Prediction of Concentration Profiles for a NIMCIX Column Absorbing Uranium from Aqueous Solution.
PER-26 1430

ATOMIC ENERGY OF CANADA LTD., CHALK RIVER (ONTARIO). CHALK RIVER NUCLEAR LABS.

CONF-790707-37
Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429

PR-B-117
Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
AECL-6206 1327

PR-CMa-46
Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335

MAKSIMA-CHEMIST: A Program for Mass Action Kinetics Simulation by Automatic Chemical Equation Manipulation and Integration Using Stiff Techniques.
AECL-6413 1335

Basic Graphical Data Management System (BAGDAMS Version 1.0). User's Guide and Reference Handbook.
AECL-6487 1356

ATOMIC WEAPONS RESEARCH ESTABLISHMENT, ALDERMASTON (ENGLAND).

AWRE-O-21/80
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach.
(DRIC-BR-75017)
AD-A091 933/2 1359

ATOMICS INTERNATIONAL DIV., RICHLAND, WA. ROCKWELL HANFORD OPERATIONS.

Radioactive Liquid Waste Discharged to Ground in the 200 Areas During 1977.
RHO-CD-34-4Q 1425

Radioactive Liquid Wastes Discharged to Ground in the 200 Areas During 1979.
RHO-CD-79-34-4Q 1425

AUBURN UNIV., AL. DEPT. OF AEROSPACE ENGINEERING.

Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
(AFATL-TR-76-47)
AD-B013 340/5 1438

AUBURN UNIV., AL. DEPT. OF INDUSTRIAL ENGINEERING.

Maintenance Productivity.
(AFOSR-TR-80-1175)
AD-A092 250/0 1296

AUTOMATION INDUSTRIES, INC., SILVER SPRING, MD. VITRO LABS. DIV.

Solar Energy System Performance Evaluation, Design Construction, Bigfork, Montana, October 1979-April 1980.
SOLAR/1029-80/14 1380

AVCO-EVERETT RESEARCH LAB., INC., EVERETT, MA.

Analysis of Barium Clouds. Volume I.
(RADC-TR-72-336-Vol-I)
AD-907 560/7 1294

BABCOCK AND WILCOX CO., ALLIANCE, OH. ALLIANCE RESEARCH CENTER.

Study of Seed Reporcessing Systems for Open Cycle Coal Fired MHD Power Plants.
DOE/ET/15613-T1 1364

BABCOCK AND WILCOX CO., LYNCHBURG, VA. POWER GENERATION DIV.

BAW-1609
Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430

BALJE (O.E.), INC., SHERMAN OAKS, CA.

Design Study for a 100-Watt Turboalternator Power Unit.
(NWC-TP-6029, GIDEP-E140-2553)
AD-B029 195/5 1364

BALLISTIC RESEARCH LABS., ABERDEEN PROVING GROUND, MD.

BRL-MR-2509
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435

BRL-MR-2631
Millimeter Wave Radar Applications to Weapons Systems.
AD-B012 103/8 1413

BARRON (REGINALD A.), GUILFORD, CT.

Mathematical Analyses of Landside Seepage Berms.
(WES/MP/GL-80-15)
AD-A092 014/0 1350

BATTELLE COLUMBUS LABS., OH.

Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.
(ARLCD-CR-80016, AD-E400-490)
AD-A092 344/1 1435

Comparison of Electron Densities in the Middle Atmosphere Indicated by Rocket Borne Probing Techniques.
(ERADCOM/ASL-CR-80-0100-2)
AD-A092 503/2 1294

BATTELLE PACIFIC NORTHWEST LABS., RICHLAND, WA.

CONF-800989-1
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379

PNL-3163
Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies.
NUREG/CR-1299 1337

Improvements to the COBRA-TF (EPRI) Computer Code for Steam Generator Analysis. Final Report.
EPRI-NP-1509 1427

Preconceptual Design and Assessment of a Tokamak Hybrid Reactor.

PNL-2720 1418
Air Oxidation and Seawater Corrosion of Hastelloy S and Hastelloy C-4.
PNL-3344 1372
Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348

BDM CORP., VIENNA, VA.
BDM/W-79-662-TR
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
(DNA-5093F)
AD-A092 154/4 1403

BENDIX CORP., KANSAS CITY, MO.
Preparation and Properties of an Internal Mold Release for Rigid Urethane Foam.
BDX-613-2510 1373

BENDIX FIELD ENGINEERING CORP., GRAND JUNCTION, CO.
Evaluation of Selected Geochemical Anomalies in Colorado and the Southeastern US. Final Report.
GJBX-114(80) 1346
Principles and Characteristics of Surface Radon and Helium Techniques Used in Uranium Exploration.
GJBX-177(80) 1346

BENDIX RESEARCH LABS., SOUTHFIELD, MI.
BRL-6633
Off-Line Orthographic Printer.
(RADC-TR-74-4)
AD-919 575/1 1399

BENDIX RESEARCH LABS SOUTHFIELD MICH DIGITAL SYSTEMS AND TECHNIQUES DEPT
6169
AS-11/B Stereoplotter Experiments and Studies.
(RADC-TR-72-94)
AD-900 360/9 1341

BERGEN UNIV. (NORWAY). FYSISK INST.
Form Factor and Multistep-Transfer Effects in Light-Ion and Heavy-Ion Induced Transfer Reactions on Rotational and Transitional Nuclei.
BUP-104 1442

BETTIS ATOMIC POWER LAB., WEST MIFFLIN, PA.
Successive Collision Calculation of Resonance Absorption (AWBA Development Program).
WAPD-TM-1468 1430

BIOLOGISCHE ANSTALT HELGOLAND (GERMANY, F.R.)
Reprint: Implications of Transplantations to Aquaculture and Ecosystems,
(NOAA-80101510-1)
PB81-120743 1316

BIOTECHNOLOGY, INC., FALLS CHURCH, VA.
Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323

BLOCK ENGINEERING, INC., CAMBRIDGE, MA.
BEI-78-M03
Laser Transmissometer, Installation, Alignment and Instruction Manual.
AD-A092 041/3 1395

BOEING AEROSPACE CO., SEATTLE, WA. ENGINEERING TECHNOLOGY DIV.
D180-26111-1
Navy Manager's Guide for the Design Sections of MIL-H-46855.
(NADC-79219-60)
AD-A092 009/0 1302

BOEING CO., RENTON, WA. COMMERCIAL AIRPLANE GROUP.
D6-24860-Pt-2
Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
(AFFDL-TR-71-108-Pt-2)
AD-894 188/2 1438

BOEING MILITARY AIRPLANE CO., SEATTLE, WA.
D180-24910-3-VOL-1
PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
(NASA-CR-3251-VOL-1)
AD-A092 175/9 1438

BOEING VERTOL CO., PHILADELPHIA, PA.
D210-10464-1
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
(AFFDL-TR-72-40-Vol-1)
AD-908 244/7 1289
D210-10464-2
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
(AFFDL-TR-72-40-Vol-2)
AD-904 089/0 1289
D210-10464-3
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
(AFFDL-TR-72-40-Vol-3)
AD-904 665/7 1438

BOHAN (WALTER A.) CO., PARK RIDGE, IL.
Navy Tactical Applications Guide. Volume I. Techniques and Applications of Image Analysis,
(NEPRF-AR-77-03)
AD-B024 969/8 1400

BOLT BERANEK AND NEWMAN, INC., CAMBRIDGE, MA.
BBN-4473
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407
BBN-10667-10676
A Guidance Document on Airport Noise Control.
(FAA/EE-80-37)
AD-A092 228/6 1290
Noise Reduction of Chain Conveyors. Volume I.
(BUMINES-OFR-133-80)
PB81-130833 1348

BOOZ-ALLEN AND HAMILTON, INC., BETHESDA, MD.
BA-09005-642-002
Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324

BOOZ-ALLEN APPLIED RESEARCH, FORT WALTON BEACH, FL.
Program Planning and Appraisal Methodology.
(AFATL-TR-77-27)
AD-B027 872/1 1297

BORDEAUX-1 UNIV., GRADIGNAN (FRANCE). CENTRE D'ETUDES NUCLEAIRES.
CONF-790765-7
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442
CONF-791219-8
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442
Dynamical Aspect of Fission Mechanism. Study of the exp 237 Np(N,F) Reaction Induced by Neutron Energies Between 0.5 and 1.75MeV.
CENBG-7809 1442
Analysis of a Quasi-Molecular Type Dissociation Involving Three Charged Fragments. Observation and Discussion of the Production of alpha Particles at Rest from the exp 12 C- alpha - exp 12 C Structure.
CENBG-7919 1442

BOSTON COLL., CHESTNUT HILL, MA. DEPT. OF CHEMISTRY.
TR-2
Carbon Dioxide Activation; Formation of trans-(Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333

BOSTON COLL., CHESTNUT HILL, MA. DEPT. OF PHYSICS.
Spectroscopic Investigations of Energetic Materials and Associated Impurities.
(NAVEODFAC-TR-211)
AD-B038 157/4 1433

BOSTON COLL., CHESTNUT HILL, MA. SPACE DATA ANALYSIS LAB.
Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
(AFGL-TR-80-0185, AFGL-ERP-706)
AD-A092 446/4 1456

BOSTON UNIV., MA.
Proceedings of the Workshop/Symposium on the Preliminary Evaluation of the Ionospheric Disturbances Associated with the HEAO-C Launch, with Applications to the SPS Environmental Assessment.
CONF-7911108- 1294

BOULDER, CO.
Treatment of Primary Effluent by Rapid Infiltration.
(EPA-600/2-80-207)
PB81-129124 1386

BRILL (WILLIAM) ASSOCIATES, INC., ANNAPOLIS, MD.
Training Manual for Interviewers.
(HUD-0001445)
PB81-139115 1311
Field Supervisor Manual.
(HUD-0001446)
PB81-139123 1312

BRITISH COLUMBIA RESEARCH COUNCIL, VANCOUVER.
Development of a Chemical Toxicity Assay for Pulp Mill Effluents.
(EPA-600/2-80-206)
PB81-126369 1339

BROOKHAVEN NATIONAL LAB., UPTON, NY.
BNL-NUREG-51266
Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424
CONF-800743-13
Keynote Address at the International Conference on Nuclear Waste Transmutation.
BNL-28193 1423
CONF-800870-3
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420
CONF-800942-12
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427
CONF-800963-5
Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315
CONF-800980-18
Bend Strain Tolerances of a Nb sub 3 Sn Conductor Proposed for Use in the Magnetic Fusion Energy Program.
BNL-28375 1414
CONF-800994-1
Acceleration of Polarized Proton at the AGS.
BNL-28323 1441
CONF-801002-9
PWR Steamline Break Analysis Assuming Concurrent Steam Generator Tube Rupture.
BNL-NUREG-26903 1427
CONF-801037-16
Pumping Behavior of Sputter Ion Pumps.
BNL-28292 1441
CONF-801039-2
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319
CONF-801068-2
Negative Deuterium Ions for Tandem Mirror Next Step and Tandem Mirror Reactors.
UCRL-84888 1420
CONF-801114-6
Atmospheric Oxidation of Sulfur Dioxide as Viewed from Power Plant and Smelter Plume Studies.
BNL-28347 1335
CONF-801114-7
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335
CONF-7908127-
Proceedings of Brookhaven National Laboratory's Fusion/Synfuel Workshop.
BNL-51188 1414
CONF-8004102-6
Search for Narrow Anti Pp States in the Reaction pi exp - p Implies p pi exp - Anti Pp at 16 GeV/C.
BNL-28353 1442
CONF-8006127-1
Problem of Phase Transitions in Nuclear Structure.
BNL-28357 1442
CONF-8006127-2
Unique Parity States in exp 109 Pd as a Test of Particle-Rotor and IBFA Models.
BNL-28305 1442
ENDF-248
Evaluation of exp 235 U Neutron Cross Section and gamma Ray Production Data for ENDF/B-V.
BNL-NCS-51184 1442
Data Formats and Procedures for the Evaluated Nuclear Data File, ENDF.
BNL-NCS-50496(Ed.2) 1441

BROWN UNIV., PROVIDENCE, RI. DEPT. OF CHEMISTRY.
COO-3235-88
Nuclear Excitations and Reaction Mechanisms. Progress Report, 1 November 1979-30 September 1980.
DOE/ER/03235-1 1444

BROWN UNIV., PROVIDENCE, RI. DEPT. OF PHYSICS.
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443

BROWN UNIV., PROVIDENCE, RI. DIV. OF APPLIED MATHEMATICS.
Reprint: Stochastic Control Under Partial Observations.
(AFOSR-TR-80-1126)
AD-A092 187/4 1376
Nonlinear Semigroup for Controlled Partially Observed Diffusions.
(AFOSR-TR-80-1136)
AD-A092 188/2 1376

BROWN UNIV., PROVIDENCE, RI. DIV. OF ENGINEERING.
N00014-0051/5
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449

BROWN UNIV., PROVIDENCE, RI. LEFSCHETZ CENTER FOR DYNAMICAL SYSTEMS.
Attractivity Properties of alpha-Contractions.
(AFOSR-TR-80-1137)

AD-A091 975/3 1375

Approximation Techniques for Parameter Estimation in Hereditary Control Systems.
(AFOSR-TR-80-1116)
AD-A092 184/1 1376

BRUNSWICK CORP LINCOLN NEBR TECHNICAL PRODUCTS DIV

PS8104-F
Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
AD-885 837/5 1399

BUREAU OF ECONOMIC ANALYSIS, WASHINGTON, DC. INTERINDUSTRY ECONOMICS DIV.

The Detailed Input-Output Structure of the U.S. Economy: 1972. Volume II. Total Requirements for Commodities and Industries, 1972. Part I. Commodity-by-Commodity Total Requirements, 1972. Part II. Industry-by-Commodity Total Requirements, 1972.
PB81-120149 1300

BUREAU OF ECONOMIC ANALYSIS, WASHINGTON, DC. REGIONAL ECONOMIC ANALYSIS DIV.

Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study.
(HUD-0001545)
PB81-139305 1301

CALIFORNIA INST. OF TECH., PASADENA. ARTHUR AMOS NOYES LAB. OF CHEMICAL PHYSICS.

Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
(ARO-14557.12-C)
AD-A092 117/1 1373

CALIFORNIA INST. OF TECH., PASADENA. EARTHQUAKE ENGINEERING RESEARCH LAB.

EERL-80-02
Full-Scale Experimental Investigation of a Modern Earth Dam.
(NSF/RA-800215)
PB81-123788 1384

CALIFORNIA RESEARCH AND TECHNOLOGY, INC., WOODLAND HILLS.

CRT-2050-2
Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
(DNA-3537F)
AD-B006 844/5 1350

CALIFORNIA STATE DEPT. OF TRANSPORTATION, SACRAMENTO. OFFICE OF TRANSPORTATION LAB.

TL-632147
Erosion Control Product Testing Using Rainfall Simulation.
(FHWA/CA/TL-80/08)
PB81-132995 1386

TL-632161
The Effectiveness of Horizontal Drains.
(FHWA/CA/TL-80/16)
PB81-124851 1384

TL-635150
Formulation and Evaluation of New Adhesives for Highway Use.
(FHWA/CA/TL-80/20)
PB81-129835 1367

CALIFORNIA UNIV., BERKELEY.

Photoelectron Photoion Molecular Beam Spectroscopy.
LBL-11434 1337

The Influence of River Water Quality on Storage Reservoir Management.
(W81-00515, OWRT-W-525)
PB81-128688 1344

CALIFORNIA UNIV., BERKELEY. COLL. OF ENGINEERING.

Development and Testing of Restraints for Nuclear Piping Systems.
UCB/EERC-80/21 1422

CALIFORNIA UNIV., BERKELEY. EARTHQUAKE ENGINEERING RESEARCH CENTER.

UCB/EERC-78/17
Strength of Timber Roof Connections Subjected to Cyclic Loads.
(HUD-0001491)
PB81-139222 1395

UCB/EERC-79/34
Interaction Effects of Simultaneous Torsional and Compressional Cyclic Loading of Sand.
(ARO-13838.1-GS)
AD-A092 352/4 1350

UCB/EERC-80/10
General Applicability of a Nonlinear Model of a One Story Steel Frame.
(NSF/RA-800196)
PB81-124877 1395

UCB/EERC-80/11
A Green-Function Method for Wave Interaction with a Submerged Body.
(NSF/RA-800197)
PB81-122269 1438

UCB/EERC-80/12
Hydrodynamic Pressure and Added Mass for Axisymmetric Bodies.
PB81-122343 1438

UCB/EERC-80/15
A Response Spectrum Method for Random Vibrations.
(NSF/RA-800201)
PB81-122301 1394

UCB/EERC-80/16
Cyclic Inelastic Buckling of Tubular Steel Braces.
(NSF/RA-800209)
PB81-124885 1395

UCB/EERC-80/17
Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction.
(NSF/RA-800291)
PB81-124000 1384

UCB/EERC-80/22
3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program.
(NSF/RA-800293)
PB81-123242 1449

CALIFORNIA UNIV., BERKELEY. ELECTRONICS RESEARCH LAB.

Research in Monolithic, Signal-Processing Circuits.
(ARO-14698.6-EL)
AD-A091 902/7 1358

Network Management Research.
(ARO-16984.1-A-EL)
AD-A092 055/3 1407

CALIFORNIA UNIV., BERKELEY. LAWRENCE BERKELEY LAB.

CONF-800329-
Workshop on Nuclear Dynamics.
LBL-10688 1445

CONF-800425-7
Speciation of Trace Organic Ligands and Inorganic and Organometallic Compounds in Oil Shale Process Waters.
LBL-11167 1454

CONF-800707-23
Rapporteur Talk for IAEA Fusion Meeting, Brussels.
LBL-11429 1417

CONF-800709-4
Pion Production in Nucleus-Nucleus Collisions Below a Few GeV/Nucleon: Past, Present and Future.
LBL-10899 1445

CONF-800724-39
Low Energy Weak Interactions and Decays.
LBL-11510 1445

CONF-7910122-
Proceedings of the Heavy Ion Fusion Workshop.
LBL-10301 1441

COO-3072-116
Open and Hidden Charm Muoproduction.
(-CONF--800724--40)
LBL-11561 1446

FERMILAB-CONF-80/84-exp
Open and Hidden Charm Muoproduction.
(-CONF--800724--40)
LBL-11561 1446

SLAC-PUB-2575
Proceedings of the Heavy Ion Fusion Workshop.
LBL-10301 1441

Residential Radon Daughter Monitor Based on alpha Spectroscopy.
LBL-10768 1422

Nonlinear Models in 2 + Epsilon Dimensions.
LBL-11517 1446

CALIFORNIA UNIV., DAVIS. DEPT. OF ENVIRONMENTAL HORTICULTURE.

Highway Operation and Plant Damage.
(FHWA/CA/TL-80/03)
PB81-133159 1387

CALIFORNIA UNIV., DAVIS. SIGNAL AND IMAGE PROCESSING LAB.

SIPL-80-11
Design and Implementation of Multi-Input Adaptive Signal Extractions.
(AFOSR-TR-80-1054)
AD-A092 265/8 1355

CALIFORNIA UNIV., LIVERMORE. LAWRENCE LIVERMORE LAB.

CONF-801102-14
Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
UCRL-84153 1425

Field-Reversed Mirror Pilot Reactor. Annual Report.
EPRI-AP-1544 1416

National Mirror Fusion Program Plan.
UCAR-10042-80 1419

Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372

Effects of Dimensionality and Boundary Conditions on Thermal Calculations.
UCID-18681 1425

Efficient Design of Two-Dimensional Recursive Digital Filters. Final Report.
UCID-18819 1361

Symbolic Software for CTR Research.
UCRL-15284 1419

Interactive Graphics, the Design Process, and Education.
UCRL-52916 1357

Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.
UCRL-52959 1426

Technology of Machine Tools. Volume 3. Machine Tool Mechanics.
UCRL-52960-3 1392

CALIFORNIA UNIV., LOS ANGELES. LAB. OF NUCLEAR MEDICINE AND RADIATION BIOLOGY.

Annual Progress Report, July 1, 1979-June 30, 1980.
UCLA-12-1253 1322

CALIFORNIA UNIV., LOS ANGELES. SCHOOL OF ENGINEERING AND APPLIED SCIENCE.

UCLA-ENG-8040
Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449

CALIFORNIA UNIV., LOS ANGELES. WATER RESOURCES CENTER.

UCAL-WRC-W-576
A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
(W81-00751, OWRT-A-077-CAL(1))
PB81-140683 1387

CALIFORNIA UNIV., SAN DIEGO, LA JOLLA. CENTER FOR HUMAN INFORMATION PROCESSING.

8004
Errors in Human Performance.
AD-A091 925/8 1308

8005
Analogical Processes in Learning.
AD-A092 233/6 1308

CALIFORNIA UNIV., SAN DIEGO, LA JOLLA. DEPT. OF CHEMISTRY.

TR-2
Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333

CALIFORNIA UNIV., SAN DIEGO, LA JOLLA. INST. OF GEOPHYSICS AND PLANETARY PHYSICS.

Reprint: Guided Solitary Waves.
AD-A092 047/0 1341

Reprint: The Second Painleve Transcendent: A Nonlinear Airy Function.
AD-A092 052/0 1375

CALIFORNIA UNIV., SAN DIEGO, LA JOLLA. SEA GRANT COLL. PROGRAM.

CSGCP-72
California's Salmon Resource - Its Biology, Use and Management.
(NOAA-80102701)
PB81-134041 1340

CALSPAN ADVANCED TECHNOLOGY CENTER, BUFFALO, NY.

CALSPAN-6486-A-1
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
(DNA-5268F)
AD-A092 229/4 1454

CAMBRIDGE UNIV. (ENGLAND). DEPT. OF ENGINEERING.

CUED/A-AERO/TR-6
Flow Restrictions in Railway Tunnels.
PB81-130395 1389

CANYON RESEARCH GROUP, INC., WESTLAKE VILLAGE, CA.

30-3067
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
(NAVTRAEQUIPC-79-C-0042-1)
AD-A091 912/6 1303

CARMEL ENERGY, INC., HOUSTON, TX.

Development and Field Testing of a Process for Recovering Heavy Crude Oil in the Carlyle Pool-Allen County, Kansas Using the Vapor Therm Generator. Final Report.
DOE/BETC-2880-1 1344

CARNEGIE-MELLON UNIV., PITTSBURGH, PA.

Low Interfacial Tension and Miscibility Studies for Surfactant Tertiary Oil Recovery Processes. Annual Report, December 1, 1978-November 30, 1979.
DOE/BC/10007-8 1344

CASDE CORP., TORRANCE, CA.

Inflatable Liferaft Stability Study.
(USCG-D-81-79)
AD-A091 986/0 1323

CASE WESTERN RESERVE UNIV., CLEVELAND, OH.

A Six State Study of Impasse Procedures in the Public Sector.
(LMSA/DRA-80/0.
PB81-130718 1307

CASE WESTERN RESERVE UNIV., CLEVELAND, OH. PLASMA RESEARCH LAB.

Momentum Distribution of Ions in Plasma Beam.

(AFOSR-TR-80-1046)
AD-A092 385/4 1447

CEA CENTRE D'ETUDES DE BRUYERES-LE-CHATEL, MONTROUGE (FRANCE).

Contribution to Research on the Elastic and Elasto-plastic Behavior of Porous Materials.
CEA-R-5006 1373

Quantitative Analysis of Carbon in Plutonium.
CEA-R-5013 1335

CEA CENTRE D'ETUDES NUCLEAIRES DE FONTENAY-AUX-ROSES (FRANCE). DEPT. D'ETUDES DES COMBUSTIBLES A BASE DE PLUTONIUM.

Study of the Kinetics of Oxygen Redistribution in UOsub(2+ X) and UCeO sub 2 Due to a Temperature Gradient.
CEA-R-5020 1336

CEA CENTRE D'ETUDES NUCLEAIRES DE FONTENAY-AUX-ROSES (FRANCE). DEPT. DE CHIMIE APPLIQUEE.

CONF-7908120-1(Abst.)
Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335

CEA CENTRE D'ETUDES NUCLEAIRES DE SACLAY, GIF-SUR-YVETTE (FRANCE). DEPT. DE GENIE ISOTOPIQUE.

Isotopic Exchange Reactions. Kinetics and Efficiency of the Reactors Using Them in Isotopic Separation.
CEA-R-5000 1420

CEA CENTRE D'ETUDES NUCLEAIRES DE SACLAY, GIF-SUR-YVETTE (FRANCE). DEPT. DE PHYSIQUE NUCLEAIRE.

CONF-7906175-1
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442

CEA CENTRE D'ETUDES NUCLEAIRES DE SACLAY, GIF-SUR-YVETTE (FRANCE). DEPT. DE RECHERCHE ET ANALYSE.

Raman and I.R. Spectra of the NH and ND Stretching Region in Polycristalline Imidazole, exp 15 N and D Substituted Analogs.
CEA-CONF-4808 1335

CEA CENTRE D'ETUDES NUCLEAIRES DE SACLAY, GIF-SUR-YVETTE (FRANCE). DEPT. DES ETUDES MECANIQUES ET THERMIQUES.

CONF-790820-4
Tests on Mechanical Behavior of 304 L Stainless Steel under Constant Stress Associated with Cyclic Strain.
CEA-CONF-4801 1370

CENTER FOR NAVAL ANALYSES, ALEXANDRIA, VA. INST. OF NAVAL STUDIES.

CNSR-8
Personnel Management in the All-Volunteer Force Study.
AD-A092 108/0 1304

CENTRAL ELECTRICITY GENERATING BOARD, BERKELEY (ENGLAND). BERKELEY NUCLEAR LABS.

Exp 235 U Fission Product gamma Spectra: A Comparison Between Experiment and Calculation.
CEGB-RD/B/N-4667 1442

CENTRAL NAUGATUCK VALLEY REGIONAL PLANNING AGENCY, WATERBURY, CT.

CNVR/80-01
Overcoming Land Use Barriers to Solar Access: Solar Planning Recommendations for Local Communities.
PB81-127359 1385

CENTRO BRASILEIRO DE PESQUISAS FISICAS, RIO DE JANEIRO.

Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292

Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
CBPF-A0003/79 1292

Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292

Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342

Note on the Differential Thermal Analysis of Amazonian Archeological Pottery.
CBPF-A0009/79 1302

Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
INIS-mf-5649 1444

CHASE, ROSEN AND WALLACE, INC., ALEXANDRIA, VA.

The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
(UMTA-IT-06-0193-79-2)
PB81-120172 1388

CHICAGO UNIV., IL.

Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326

CHICAGO UNIV., IL. JAMES FRANCK INST.

Gas Surface Dynamics, High Power Laser-Solid Interactions.
(AFOSR-TR-80-1114)
AD-A092 183/3 1333

CLARKE AND RAPUANO, INC., NEW YORK.

Evaluation of Alternative Interment Methods for National Cemeteries.
(VA-80/0001)
PB81-123879 1309

CNR, INC., NEEDHAM, MA.

Integrated Coding and Waveform Design Study.
(RADC-TR-80-282)
AD-A091 985/2 1410

COASTAL AREA PLANNING AND DEVELOPMENT COMMISSION, BRUNSWICK, GA.

A Coordination, Education, and Mitigation Model for Disaster Preparedness in Coastal Areas.
AD-A092 173/4 1309

COASTAL ENGINEERING RESEARCH CENTER, FORT BELVOIR, VA.

CERC-REPRINT-80-3
Reprint: Sand Motion Initiation by Water Waves: Two Asymptotes.
AD-A092 045/4 1341

CERC-TP-80-5
Experimental Dune Restoration and Stabilization, Nauset Beach, Cape Cod, Massachusetts.
AD-A092 110/6 1340

COLD REGIONS RESEARCH AND ENGINEERING LAB., HANOVER, NH.

CRREL-80-20
Investigations of Sea Ice Anisotropy, Electromagnetic Properties, Strength, and Under-ice Current Orientation.
AD-A092 089/2 1349

CRREL-80-21
Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools.
AD-A092 365/6 1391

CRREL-80-22
The Neumann Solution Applied to Soil Systems.
AD-A092 244/3 1350

COLLEGE DE FRANCE, PARIS. LAB. DE PHYSIQUE CORPUSCULAIRE.

Simple Parametrization of the Structure Functions of the Photon.
LPC-79-16 1446

COLONEY (WAYNE H) CO INC TALLAHASSEE FLA

GFU-6/E 30mm Ammunition Loader for GAU-8A Gun System.
(AFATL-TR-75-158)
AD-B010 100/6 1432

COLORADO COOPERATIVE FISHERY, RESEARCH UNIT, FORT COLLINS.

Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant.
(REC-ERC-79-17)
PB81-130049 1322

COLORADO DIV. OF WILDLIFE, FORT COLLINS.

Wildlife Research Report. Part One.
PB81-124638 1384

COLORADO SCHOOL OF MINES, GOLDEN.

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
(AFWL-TR-79-120-VOL-1-1, AD-E200-579)
AD-A091 976/1 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
(AFWL-TR-79-120-VOL-1-2, AD-E200-580)
AD-A092 012/4 1380

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
(AFWL-TR-79-120-VOL-2, AD-E200-581)
AD-A092 013/2 1380

Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, April-June 1979 and July-September 1979.
DOE/ET/13395-1/2 1453

Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, October-December 1979 and January-March 1980.
DOE/ET/13395-3/4 1453

Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, April-June 1980.
DOE/ET/13395-5 1453

Sorption of H sub 2 S on Spent Shale in Packed Beds.
DOE/LC/10020-T4 1454

COLORADO SCHOOL OF MINES, GOLDEN. DEPT. OF CHEMICAL AND PETROLEUM REFINING ENGINEERING.

Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, July-September 1980.
DOE/ET/13395-6 1453

COLORADO STATE UNIV., FORT COLLINS. DEPT. OF AGRICULTURAL AND CHEMICAL ENGINEERING.

Reconnaissance Study of Leachate Quality from Raw Mined Oil Shale - Laboratory Columns.
(EPA-600/7-80-181)
PB81-129017 1386

COLORADO STATE UNIV., FORT COLLINS. DEPT. OF CHEMISTRY.

Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
(ARO-14771.6-C)
AD-A092 119/7 1333

Reprint: Raman Spectra of SiF4 and GeF4 Crystals.
(ARO-14771.8-C)
AD-A092 332/6 1334

Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
(ARO-14771.9-C)
AD-A092 333/4 1334

Reprint: On the Jahn-Teller Effect in ReF6.
(ARO-14771.10-C)
AD-A092 334/2 1334

Reprint: Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State.
(ARO-14771.11-C)
AD-A092 335/9 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
(ARO-14771.12-C)
AD-A092 336/7 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
(ARO-14771.13-C)
AD-A092 337/5 1334

Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
(ARO-14771.14-C)
AD-A092 338/3 1334

COLORADO STATE UNIV., FORT COLLINS. DEPT. OF ELECTRICAL ENGINEERING.

Reprint: A Digital Image System for Atmospheric Research.
(ARO-13971.8-GS)
AD-A092 489/4 1356

COLORADO STATE UNIV., FORT COLLINS. DEPT. OF RADIOLOGY AND RADIATION BIOLOGY.

Radioecological Investigations of Uranium Mill Tailings Systems. Progress Report, September 1, 1979-September 30, 1980.
DOE/EV/10305-1 1426

COLORADO STATE UNIV., FORT COLLINS. SOLAR ENERGY APPLICATIONS LAB.

Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379

COLORADO UNIV. AT BOULDER.

Hardware Realizations for Digital Signal Processing.
(ARO-15974.1-EL)
AD-A091 904/3 1359

COLORADO UNIV. HEALTH SCIENCES CENTER, DENVER.

An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
PB81-132334 1321

COLUMBIA RADIATION LAB. NEW YORK.

Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335

COLUMBIA UNIV., NEW YORK.

Transport and Transfer Rates in the Waters of the Continental Shelf. Annual Report.
COO-2185-13 1383

COMMAND AND CONTROL TECHNICAL CENTER, WASHINGTON, DC.

CCTC-TM-181-78-REV
Generalized Monitoring Facility. Revision I. Installation Guide (W6.4.1).
(SBIE-AD-E100117)
AD-B031 430/2 1356

COMMISSION OF THE EUROPEAN COMMUNITIES, LUXEMBOURG.

Completion of a Prototype Installation for in-Line Coating by the Pyrosol Process for the Realization of Selective Glazings. Final Report.
EUR-6806-FR 1362

COMMUNICATIONS RESEARCH CENTRE, OTTAWA (ONTARIO).

CRC-TN-702
An Investigation of HF Direction-Finding Accuracy on the Churchill-Ottawa Auroral Zone Path.
AD-A092 311/0 1410

CRC-TN-703
An Investigation of HF Direction-Finding Accuracy on the Frobisher Bay-Ottawa Auroral Zone Path.
AD-A092 312/8 1410

COMPREHENSIVE HEALTH PLANNING COUNCIL OF SOUTHEASTERN MICHIGAN, INC., DETROIT.

Criteria and Standards for Radiation Therapy (Megavoltage) in Southeastern Michigan.
HRP-0902605/5 1320

COMPUTER SCIENCES CORP., FALLS CHURCH, VA.

CSC-R-3301-1
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
(AFAL-TR-74-81-Vol-1)
AD-918 631/3 1409

Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
(RADC-TR-74-258-Vol-1-App)
AD-B000 632/0 1409

COMPUTER SYSTEMS MANAGEMENT, INC., ARLINGTON, VA.

CSM-80-05
The Design, Development, Demonstration and Transfer of Advanced Command and Control (C2) Computer-Based Systems.
AD-A092 293/0 1356

CONNECTICUT UNIV. HEALTH CENTER, FARMINGTON.

Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
(NIDR/CR-80-12)
PB81-122962 1320

CONSTRUCTION ENGINEERING RESEARCH LAB. (ARMY), CHAMPAIGN, IL.

CERL-TR-N-93
Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381

CERL-TR-P-112-VOL-1
Type II Forward Storage Site Facilities. POMCUS System. Volume 1.
AD-A092 310/2 1401

CONTROL DYNAMICS CO., HUNTSVILLE, AL.

Guidance and Control of Anti-Tactical Ballistic Missiles.
AD-A092 015/7 1400

COPLEY INTERNATIONAL CORP., LA JOLLA, CA.

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
(HUD-0001541)
PB81-139271 1301

Study to Indentify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part II: Appendix 1, Home Owner Questionnaire.
(HUD-0001542)
PB81-139289 1301

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part III: Appendix 2, Lending Institution Questionnaire.
(HUD-0001543)
PB81-139297 1301

CORNELL AERONAUTICAL LAB., INC., BUFFALO, NY.

CAL-UB-1088-P-103
Error Analysis of Ruby Radar Cross Section Measurement System.
AD-A950 100/8 1413

CORNELL UNIV., ITHACA, NY.

The Overtime Pay Provisions of the Fair Labor Standards Act,
PB81-132243 1300

CORNELL UNIV., ITHACA, NY. DEPT. OF MATERIALS SCIENCE AND ENGINEERING.

Range Profiles of Low Energy (100 to 1500 EV) Implanted exp 3 He and exp 4 He in Tungsten. II. Analysis and Discussion. Materials Science Center Report No. 4108.
DOE/ER/03158-73 1336

CORNING GLASS WORKS, NY.

CONF-800963-6
Energetic Control of Intact Chloroplast Photosynthesis.
BNL-28423 1315

DARTMOUTH COLL., HANOVER, NH. DEPT. OF MATHEMATICS.

Natural Language Data Base Query.
AD-A092 500/8 1302

DATA SIGNAL CORP., WATERTOWN, MA.

Local Energy Monitoring and Control Analysis.
(USAFESA-TS-2063)
AD-A091 929/0 1378

DAVID W TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER ANNAPOLIS MD PROPULSION AND AUXILIARY SYSTEMS DEPT

PAS-76-8
Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352

DAVID W. TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER, BETHESDA, MD.

DTNSRDC-80/061
Response of a Point Excited Infinitely Long Cylindrical Shell Immersed in an Acoustic Medium.
AD-A091 947/2 1449

DTNSRDC-80/101
Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
AD-A091 909/2 1392

DAVID W. TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER, BETHESDA, MD. AVIATION AND SURFACE EFFECTS DEPT.

DTNSRDC/ASED-80/14
P-3 Orion Fuel-Saving Modification Wind Tunnel Study.
AD-A091 906/8 1288

DAVID W TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER BETHESDA MD CENTRAL INSTRUMENTATION DEPT

CID-77-2
Infrared Thermometry and the Telatemp 44 as a Ship System Maintenance Monitoring Tool.
AD-B018 764/1 1393

DAVID W. TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER, BETHESDA, MD. SHIP PERFORMANCE DEPT.

DTNSRDC-SPD-458-01
An Investigation of Appendage Drag.
AD-A092 353/2 1392

DTNSRDC/SPD-693-02
Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392

DTNSRDC/SPD-0719-01
Dynamic Hull and Propeller Interaction Factors for FF-1052 Predicted from Quasi-Steady Model Experiments.
AD-A091 890/4 1392

DTNSRDC/SPD-0820-03
Documentation for an Improved Version of HULIMP, A Ship Hull Improvement Computer Program Based on the Baba Theory.
AD-A092 133/8 1392

DTNSRDC/SPD-0833-04
Analysis of Wake Survey Experimental Data for Model 5365 Representing the R/V ATHENA in the DTNSRDC Towing Tank.
AD-A092 246/8 1392

DTNSRDC/SPD-0840-01
Program PHFMOPT, Planing Hull Feasibility Model, User's Manual.
AD-B033 624/8 1393

DTNSRDC/SPD-0851-01
Correlation of Model Experiments with Ship Powering Data for Three Tankers Represented by Models 9006, 9007, 9008, and 9009.
AD-A091 940/7 1392

DTNSRDC/SPD-0965-01
Documentation for the Ship Hydrostatics Computer Program HYDRO.
AD-A092 454/8 1393

DAYTON UNIV., OH

An Instructional Module on Library Research,
ED-183 153 1298

DAYTON UNIV., OH. RESEARCH INST.

UDR-TR-80-29
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
(AFWAL-TR-80-4094)
AD-A091 945/6 1369

DEBELL AND RICHARDSON INC ENFIELD CONN

30MM GAU-8/A Plastic Frangible Projectile.
(AFATL-TR-77-36)
AD-B027 446/4 1433

DECISIONS AND DESIGNS, INC., MCLEAN, VA.

Pilot Automated Influence Diagram Decision Aid.
AD-A092 129/6 1308

A Manual for Encoding Probability Distributions.
AD-A092 259/1 1378

Decision Flexibility in a Learning Environment.
AD-A092 498/5 1309

Game Theory, Decision Theory, and Social Choice Theory in the Context of a New Theory of Equity.
AD-A092 499/3 1378

DEFENCE AND CIVIL INST OF ENVIRONMENTAL MEDICINE, DOWNSVIEW (ONTARIO).

DCIEM-PUB-75X17
Reprint: Further Remarks on the Mechanism Producing the Symptoms of Meniere's Disease.
AD-A092 046/2 1317

DCIEM-RP-80-RSU-52
Reprint: Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance.
AD-A092 048/8 1308

DCIEM-80-C-31
Air Saturation Dive 4 - 8 February 1980, CEDD Test Number 1-80.
AD-A092 368/0 1328

DCIEM-80-R-42
Evaluation of the Scott Aviox Emergency Oxygen System during a Rapid Decompression to 25,000 Feet.
AD-A092 204/7 1323

DEFENCE RESEARCH ESTABLISHMENT ATLANTIC, DARTMOUTH (NOVA SCOTIA).

DREA-TM-80/G
A Study of Filled and Sparse Line Array Beamformers.
AD-A092 367/2 1407

DEFENCE RESEARCH ESTABLISHMENT OTTAWA (ONTARIO).

DREO-TN-80-20
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326

DEFENCE RESEARCH ESTABLISHMENT VALCARTIER (QUEBEC).

Reprint: Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions.
(DRB-REPRINT-4256)
AD-A092 051/2 1440

Reprint: Frequency-Stabilized Hybrid CO Laser.
(DRB-REPRINT-4255)
AD-A092 053/8 1439

DEFENSE MAPPING AGENCY HYDROGRAPHIC/ TOPOGRAPHIC CENTER, WASHINGTON, DC.

Simple Algorithms for Calculation of Scale Factors for Plan Coordinate Systems (1927 NAD and 1983 NAD),
AD-A092 461/3 1377

DELTA INFORMATION SYSTEMS, INC., JENKINTOWN, PA.

Use of a Microprocessor to Implement an ADCCP Protocol (Federal Standard 1003).
(NCS-TIB-80-7)
AD-A092 272/4 1408

Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
(NCS-TIB-80-6)
AD-A092 395/3 1408

DEPARTMENT OF AGRICULTURE, WASHINGTON, DC.

PAT-APPL-6-027 696
Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332

PAT-APPL-6-057 856
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369

PAT-APPL-6-061 169
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332

PB81-129371
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332

PB81-129389
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369

PB81-129397
Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332

PB81-129405
Solubilization of Lignocellulosic Materials.
PAT-APPL-6-180 546 1338

PB81-129413
Improving the Removal of Lint from Cottonseed.
PAT-APPL-6-180 542 1390

PB81-129439
Apparatus for Removing Corn from Cob.
PAT-APPL-6-187 380 1323

PB81-129595
Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369

DEPARTMENT OF COMMERCE, WASHINGTON, DC.

PAT-APPL-6-031 706
Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368

PB81-116642
Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368

Business America - The Journal of International Trade, Volume 3, Number 24, December 1, 1980.
PB81-124396 1300

DEPARTMENT OF DEFENSE, WASHINGTON, DC.

Department of Defense Materiel Distribution System Study. Volume I. Executive Summary.
AD-B029 883/6 1401

Department of Defense Materiel Distribution System Study. Volume II. Technical report.
AD-B029 884/4 1401

Department of Defense Materiel Distribution System Study. Volume III. Book 1, Optimization Model Run Index.
AD-B029 885/1 1401

Department of Defense Materiel Distribution System Study. Volume III, Book 2. Appendices A, B and C.
AD-B029 886/9 1401

Department of Defense Materiel Distribution System Study. Volume III. Book 3. Appendix D-1. Data Base Development.
AD-B029 887/7 1402

Department of Defense Materiel Distribution System Study. Volume III, Book 4. Appendix D-2, Data Aggregation.
AD-B029 888/5 1402

Department of Defense Materiel Distribution System Study. Volume 3, Book 5. Appendix D-3. Depot Cost and Capacity.
AD-B029 889/3 1402

Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 6. Appendix D-4, Transportation.
AD-B029 890/1 1402

Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 7. Appendix D-5, Models.
AD-B029 891/9 1402

Department of Defense Materiel Distribution System Study (DODMDS). Volume III. Book 8, Appendices E, F, and G.
AD-B029 892/7 1402

DEPARTMENT OF ENERGY, BARTLESVILLE, OK. BARTLESVILLE ENERGY TECHNOLOGY CENTER.

Contracts for Field Projects and Supporting Research on Enhanced Oil Recovery and Improved Drilling Technology.
DOE/BETC-80/3 1344

DEPARTMENT OF ENERGY, LARAMIE, WY. LARAMIE ENERGY TECHNOLOGY CENTER.

Tar Sand Extraction by Steam Stimulation and Steam Drive: Measurement of Physical Properties.
DOE/LETC/TPR-80-1761 1345

DEPARTMENT OF ENERGY, MORGANTOWN, WV. MORGANTOWN ENERGY TECHNOLOGY CENTER.

CONF-7804179-
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343

DEPARTMENT OF ENERGY, OAK RIDGE, TN. TECHNICAL INFORMATION CENTER.

Energy Information Data Base: Serial Titles.
DOE/TIC-4579(Rev.11) 1362

Energy Information Data Base: Corporate Author Entries.
DOE/TIC-4585(Rev.2) 1362

DEPARTMENT OF ENERGY, WASHINGTON, DC.

DOE-WT-1033 (EX)
Operation WIGWAM. Project 4.1. Weapons Placement at Operation WIGWAM.
AD-B951 738/4 1402

PAT-APPL-666 533
Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391

PAT-APPL-784 488
Crosslinked Crystalline Polymer and Methods for Cooling and Heating.
PATENT-4 182 398 1338

PAT-APPL-927 234
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332

Environmental Development Plan. LWR Commercial Waste Management.
DOE/EDP-0063 1423

Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331

Preparation of Grout for Stabilization of Abandoned In-situ Oil Shale Retorts.
PAT-APPL-6-101 364 1383

Apparatus for Installing Condition-Sensing Means in Subterranean Earth Formations.
PAT-APPL-6-101 370 1396

Submergible Barge Retrievable Storage and Permanent Disposal System for Radioactive Waste.
PAT-APPL-6-106 203 1424

Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347

Improved Electrostatic Coalescense System with: Independent AC and DC Hydrophilic Electrodes.
PAT-APPL-6-110 738 1337

Method for Improving Dissolution Efficiency in Gas-Absorption and Liquid Extraction Processes.
PAT-APPL-6-111 495 1337

Thermochemical Generation of Hydrogen and Oxygen from Water.
PAT-APPL-6-119 738 1454

Two Stage Liquefaction of Coal.
PAT-APPL-6-124 057 1331

DEPARTMENT OF ENERGY, WASHINGTON, DC. DIV. OF BUILDINGS AND COMMUNITY SYSTEMS.

Air Infiltration in Buildings: International Energy Agency (IEA). Draft Program Plan.
DOE/CS-0099-D 1379

DEPARTMENT OF ENERGY, WASHINGTON, DC. ENERGY INFORMATION ADMINISTRATION.

Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453

Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330

DEPARTMENT OF ENERGY, WASHINGTON, DC. OFFICE OF TRANSPORTATION PROGRAMS.

Highway Vehicle Systems Contractors Coordination Meeting. Seventeenth Summary Report.
CONF-791082-(Sum.) 1453

DEPARTMENT OF HEALTH AND HUMAN SERVICES, WASHINGTON, DC.

PAT-APPL-954 218
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

PB81-126500
Blood Gas Analyzer System.
PAT-APPL-6-157 380 1324

PB81-129652
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
PAT-APPL-6-172 086 1325

PB81-129686
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326

PB81-129702
Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
PAT-APPL-6-195 188 1396

PB81-131377
Electric Gel Slicer.
PAT-APPL-6-174 239 1396

PB81-131385
Intracranial Pressure Monitoring Device.
PAT-APPL-6-163 952 1324

PB81-131401
Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 594 1325

PB81-131419
N-Acetyl-Cysteine Protects Against Cardiac Damage from Subsequently-Administered Cardio-Toxic Anthracycline in Cancer Therapy.
PAT-APPL-6-190 064 1326

PB81-131427
Inactivation on Non-A, Non-B Hepatitis Agent.
PAT-APPL-6-150 320 1325

PB81-131435
Water Soluble Forms of Retinoids.
PAT-APPL-6-170 570 1332

PB81-131450
Contrast Resolution Tissue-Equivalent Ultrasound Test Object.
PAT-APPL-6-186 381 1324

PB81-131484
Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
PAT-APPL-6-181 465 1332

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, WASHINGTON, DC.

PAT-APPL-6-058 177
Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332

PAT-APPL-966 329
Horizontal Flow-Through Coil Planet Centrifuge.
PATENT-4 228 950 1396

PB81-129355
Horizontal Flow-Through Coil Planet Centrifuge.
PATENT-4 228 950 1396

PB81-129363
Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332

PB81-129603
Separation of Triphenylphosphine Oxide from Methotrexate Ester and Purification of Said Ester.
PAT-APPL-6-143 129 1338

PB81-129611
Improved Synthesis of 2,4-Diamino-6-Hydroxymethylpteridine.
PAT-APPL-6-133 788 1332

PB81-129629
Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331

PB81-129637
Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331

PB81-129660
Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325

PB81-131369
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338

PB81-131393
Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325

PB81-131443
Toluidine Blue Rinse for the Detection of Squamous Carcinoma of the Oral Cavity and Other Structures Composition and Method.
PAT-APPL-6-105 079 1325

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, SAN FRANCISCO, CA. OFFICE OF PROGRAM PLANNING AND EVALUATION.

Monitoring in Urban Counties.
(HUD-0001147)
PB81-138976 1310

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, WASHINGTON, DC. DIV. OF POLICY DEVELOPMENT.

Housing Needs of the Rural Elderly and Handicapped.
(HUD-0001653)
PB81-139446 1314

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, WASHINGTON, DC. OFFICE OF ECONOMIC AFFAIRS.

Housing Our Families,
(HUD-0001672)
PB81-139453 1314

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, WASHINGTON, DC. OFFICE OF HOUSING.

HUD-H-316
Multifamily Property Utilization Task Force.
(HUD-0001448)
PB81-139131 1312

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, WASHINGTON, DC. OFFICE OF POLICY DEVELOPMENT AND RESEARCH.

HUD/PDR-269(2)
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study,
(HUD-0000181)
PB81-138968 1310

Housing Production with Non Profit Sponsors.
(HUD-0001442)
PB81-139107 1311

DEPARTMENT OF THE AIR FORCE, WASHINGTON, DC.

AD-D007 853/5
Flow-Closing Bleed Valve Assembly.
PAT-APPL-6-171 611 1455

AD-D007 854/3
Taggants with Explosive Induced Magnetic Susceptibility.
PAT-APPL-6-181 924 1433

AD-D007 855/0
Multi-Tone Jammer.
PAT-APPL-6-181 940 1410

AD-D007 856/8
Perfluorocompounds.
PAT-APPL-6-182 562 1374

AD-D007 857/6
Perfluorocarbon Ethers.
PAT-APPL-6-182 564 1374

AD-D007 858/4
Perfluorinated Epoxides.
PAT-APPL-6-182 563 1374

AD-D007 859/2
A Netted Search Radar System.
PAT-APPL-6-185 469 1413

AD-D007 860/0
P+ N Gallium Phosphide Photodiodes.
PAT-APPL-6-185 471 1352

AD-D007 861/8
Automatic Bandwidth Control System.
PAT-APPL-6-185 472 1412

AD-D007 862/6
Improved Film Cooled Annular Combustor.
PAT-APPL-6-185 473 1455

AD-D007 863/4
Fuel Valve.
PAT-APPL-6-187 646 1455

AD-D007 864/2
Power Circuit Utilizing Self Excited Hall Effect Switch Means.
PAT-APPL-6-189 237 1361

AD-D007 876/6
Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332

AD-D007 877/4
Radar Sensitivity Time Control Using Range Gated Feedback.

ENGELHARD MINERALS AND CHEMICALS CORP., EDISON, NJ.

PATENT-4 228 435 1413

AD-D007 878/2
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332

AD-D007 879/0
Offset Correction Apparatus for a Successive Approximation A/D Converter.
PATENT-4 228 423 1361

AD-D007 880/8
Clutch Protection Circuit.
PATENT-4 227 232 1361

AD-D007 881/6
High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361

AD-D007 882/4
Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369

PAT-APPL-6-005 885
Radar Sensitivity Time Control Using Range Gated Feedback.
PATENT-4 228 435 1413

PAT-APPL-6-018 696
Clutch Protection Circuit.
PATENT-4 227 232 1361

PAT-APPL-6-025 413
High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361

PAT-APPL-6-046 898
Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332

PAT-APPL-6-048 322
Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369

PAT-APPL-6-069 476
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332

PAT-APPL-866 143
Offset Correction Apparatus for a Successive Approximation A/D Converter.
PATENT-4 228 423 1361

DEPARTMENT OF THE NAVY, WASHINGTON, DC.

AD-D007 865/9
Non-Fouling Print Stylus.
PATENT-4 206 466 1399

AD-D007 866/7
Connector-to-Connector Adaptor.
PATENT-4 218 110 1352

AD-D007 867/5
Surface Acoustic Signal Defader.
PATENT-4 219 888 1437

AD-D007 868/3
Long Range Listening System.
PATENT-4 223 311 1410

AD-D007 869/1
Chemical Agent Detection Method and Apparatus.
PATENT-4 225 316 1399

AD-D007 870/9
Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353

AD-D007 871/7
Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455

AD-D007 872/5
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

AD-D007 873/3
Acoustical Deverberator.
PATENT-4 225 954 1407

AD-D007 874/1
Reverse Velocity Rotor System for Rctorcraft.
PATENT-4 227 856 1289

AD-D007 875/8
Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361

PAT-APPL-6-015 675
Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455

PAT-APPL-6-019 792
Non-Fouling Print Stylus.
PATENT-4 206 466 1399

PAT-APPL-6-024 827
Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353

PAT-APPL-6-026 982
Connector-to-Connector Adaptor.
PATENT-4 218 110 1352

PAT-APPL-157 299
Chemical Agent Detection Method and Apparatus.
PATENT-4 225 316 1399

PAT-APPL-568 681
Long Range Listening System.
PATENT-4 223 311 1410

PAT-APPL-924 101
Reverse Velocity Rotor System for Rotorcraft.
PATENT-4 227 856 1289

PAT-APPL-928 218
Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361

PAT-APPL-943 894
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361

PAT-APPL-967 749
Surface Acoustic Signal Defader.
PATENT-4 219 888 1437

PAT-APPL-972 124
Acoustical Deverberator.
PATENT-4 225 954 1407

DEPARTMENT OF TRANSPORTATION, WASHINGTON, DC. LIBRARY SERVICES DIV.

DOT-OST-LIB-11
Energy Use in Transportation. Selected References.
AD-A092 157/7 1361

DEPARTMENT OF TRANSPORTATION, WASHINGTON, DC. OFFICE OF THE SECRETARY.

DOT-M-80-1
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297

DEPUTY CHIEF OF STAFF FOR LOGISTICS (ARMY), WASHINGTON, DC.

Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304

DEUTSCHES ELEKTRONEN-SYNCHROTRON, HAMBURG (GERMANY, F.R.).

3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336

Characterization of the Higgs Phase in Lattice Gauge Theories.
DESY-79/72 1443

Area Law as a Consequence of the Loop Wave Equation.
DESY-79/82 1448

DEVENCO INC NEW YORK RESEARCH AND DEVELOPMENT DIV

3664-F
Modifications to Devenco Model PPS-3A Radar Fence.
(RADC-TR-71-118)
AD-885 234/5 1413

Perimeter Protection System.
(RADC-TR-69-168)
AD-503 039/0 1413

DREXEL UNIV., PHILADELPHIA, PA.

Health Planning Related to Environmental Factors. Volume II: Foodborne and Waterborne Intestinal Illnesses Module,
HRP-0902233/6 1319

Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text,
HRP-0902234/4 1320

DU PONT DE NEMOURS (E.I.) AND CO., AIKEN, SC. SAVANNAH RIVER LAB.

CONF-800943-17
Safety Evaluation of a Conceptual Fuel Recycle Complex.
DP-MS-80-6 1429

CONF-801034-2
Effects of Processing Variables on the Product Quality of Large-Scale Glass Forms Containing Simulated SRP Waste.
DP-MS-80-50 1423

DPST-80-146-12
Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346

Computer Code to Assess Accidental Pollutant Releases.
DP-1552 1426

Calculation of Particulate Dispersion in a Design-Basis Tornadic Storm from the Atomics International Nuclear Material Development Facility, Santa Susana, California.
DP-1566 1426

DYNATECH R/D CO., CAMBRIDGE, MA.

Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453

EAGLE-PICHER INDUSTRIES, INC., JOPLIN, MO. ELECTRONICS DIV.

High Rate, Rechargeable, Silver-Zinc Pile Type Battery.
(AFAPL-TR-75-51)
AD-B007 515/0 1366

EAST CENTRAL MICHIGAN HEALTH SYSTEMS AGENCY, INC., SAGINAW.

Plan for the Reduction of Excess Hospital Beds in the Bay and Saginaw Subareas.
HRP-0902558/6 1320

ECONOMICS AND STATISTICS SERVICE, WASHINGTON, DC. NATIONAL ECONOMICS DIV.

AGESS-801002
Structure and Adjustments of the Farming Sector: A Data Base by Regions.
PB81-137705 1291

AGESS-801022.1
The Impact of Demand-Sensitive Railroad Rates Upon the Storage and Transportation System for U.S. Feed Grains.
PB81-134165 1291

ECONOMICS AND STATISTICS SERVICE, WASHINGTON, DC. STATISTICAL RESEARCH DIV.

AGESS-801128
Examination of Farmer-Reported Acreages.
PB81-130874 1291

EG AND G GEOMETRICS, SUNNYVALE, CA.

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Memphis Quadrangle, Arkansas, Missouri, and Tennessee. Final Report.
GJBX-178(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Fort Smith Quadrangle, Oklahoma, and Arkansas. Final Report.
GJBX-200(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Nashville Quadrangle, Tennessee, and Kentucky. Final Report.
GJBX-202(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Tupelo Quadrangle, Mississippi, Alabama, and Tennessee. Final Report.
GJBX-203(80) 1346

Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Russellville Quadrangle, Arkansas.
GJBX-204(80) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Projects, Colorado. Volume I. Final Report.
GJBX-212(80) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 1, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA1) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 2, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA2) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 3, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA3) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 4, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA4) 1347

Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 5, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA5) 1347

EG AND G IDAHO, INC., IDAHO FALLS.

Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
CONF-801102-1 1427

Response of LOFT SPNDs to Reactor Coolant Density Variations During a LOCA Simulation.
CONF-801107-1 1427

Tables of Homogeneous Equilibrium Critical Flow Parameters for Water in SI Units.
EGG-2056 1427

EG AND G WASHINGTON ANALYTICAL SERVICES CENTER, INC., ROCKVILLE. MD.

D460-101
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
(USGS/WRD/WRI-80/080)
PB81-132235 1344

ELECTRONICS RESEARCH LAB., ADELAIDE (AUSTRALIA).

ERL-0143-TR
Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
AD-A091 957/1 1353

EMMANUEL COLL., BOSTON, MA.

Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
(AFGL-TR-80-0319)
AD-A092 084/3 1293

ENERGY TECHNOLOGY ENGINEERING CENTER, CANOGA PARK, CA.

CONF-801011-9
Properties of Lead-Lithium Solutions.
UCRL-84273 1419

ENGELHARD MINERALS AND CHEMICALS CORP., EDISON, NJ. ENGELHARD INDUSTRIES DIV.

Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quar-

terly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
DOE/ET/15383-18 1364

Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.
DOE/ET/15383-22 1364

ENVIRONMENTAL MONITORING SYSTEMS LAB., LAS VEGAS, NV.

Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
(EPA-600/7-80-151)
PB81-142192 1387

ENVIRONMENTAL PROTECTION AGENCY, ANN ARBOR, MI. CONTROL TECHNOLOGY ASSESSMENT AND CHARACTERIZATION BRANCH.

EPA-AA-CTAB/PA/80-5
Comparison of Gas Phase Hydrocarbon Emissions from Light-Duty Gasoline Vehicles and Light-Duty Vehicles Equipped with Diesel Engines.
PB81-122996 1389

ENVIRONMENTAL PROTECTION AGENCY, ANN ARBOR, MI. TECHNOLOGY ASSESSMENT AND EVALUATION BRANCH.

EPA-AA-TAEB-77-01
The Effects of Emission Control System Malfunctions or Maladjustments on Exhaust Emissions.
PB81-122004 1389

EPA-AA-TAEB-77-03
Results of Sulfate Tests on Prototype Vehicles.
PB81-123028 1389

ENVIRONMENTAL PROTECTION AGENCY, CHICAGO, IL. REGION V.

EPA-905/2-80-006
Region V's Guidance for Developing a State Malfunction Notification and Correction Program,
PB81-125601 1384

ENVIRONMENTAL PROTECTION AGENCY, SAN FRANCISCO, CA. REGION IX.

Modesto Wastewater Facilities Improvements.
PB81-130502 1386

ENVIRONMENTAL PROTECTION AGENCY, WASHINGTON, DC. OFFICE OF WATER PROGRAM OPERATIONS.

National Municipal Policy and Strategy for Construction Grants, NPDES Permits, and Enforcement Under the Clean Water Act.
PB81-130783 1386

ENVIRONMENTAL RESEARCH INST. OF MICHIGAN, ANN ARBOR. APPLICATIONS DIV.

ERIM-134400-11-F-VOL-1
Coastal Remote Sensing Investigations. Volume 1. Marine Environment.
AD-A092 025/6 1348

ENVIRONMENTAL RESEARCH LAB., ATHENS, GA.

EPA-600/J-80-105
Reprint: Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
PB81-129470 1339

EPA-600/J-80-151
Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324

ENVIRONMENTAL RESEARCH LAB.-DULUTH, CINCINNATI, OH. NEWTOWN FISH TOXICOLOGY STATION.

EPA-600/J-80-194
Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329

ENVIRONMENTAL RESEARCH LAB., GULF BREEZE, FL.

CONTRIB-378
Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

CONTRIB-410
Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

EPA-600/J-80-007
Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329

EPA-600/J-80-080
Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329

EPA-600/J-80-094
Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329

EPA-600/J-80-095
Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329

ERL-GB-J830
Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329

EXXON NUCLEAR IDAHO CO., INC., IDAHO FALLS.

Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423

Calcination of Sodium-Bearing Waste Using Non-Radioactive Additives.
ENICO-1043 1424

Inventory of Calcined Waste Stored at the ICPP as of September 1979.
ENICO-1044 1424

Continuous Plutonium Monitor for Nuclear Facility off-Gas Streams.
ENICO-1054 1396

Storage and Retrievability of Existing and Future ICPP Calcines.
ENICO-1060 1424

Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420

EXXON RESEARCH AND ENGINEERING CO., FLORHAM PARK, NJ. ENGINEERING AND TECHNOLOGY DEPT.

Industrial Application Fluidized Bed Combustion: Indirect Fired Process Heaters. Final Program Report.
DOE/ET/10379-T3 1453

FABRIC RESEARCH LABS INC DEDHAM MASS

Exploratory Development of Coated Fabric for Fire Proximity Suits.
(CEEDO-TR-78-21, AFML-TR-78-10)
AD-B029 209/4 1369

FAUCETT (JACK) ASSOCIATES, INC., CHEVY CHASE, MD.

Industrial Cogeneration Case Study No. 3: Mead Corporation Paper Mill, Kingsport, Tennessee.
ANL/CNSV-TM-42 1364

FEDERAL AVIATION ADMINISTRATION TECHNICAL CENTER, ATLANTIC CITY, NJ.

FAA-CT-80-20
Consolidated Car Display: A Summary Report of the Process and the Results of the Consolidation of Critical and Supplementary Terminal Area Air Traffic Control Information for Display Presentation.
(FAA-RD-80-73)
AD-A092 450/6 1412

FAA-CT-80-36
Exhaust Emission Characteristics and Variability for Maintained General Electric CF6-50 Turbofan Engines.
AD-A092 291/4 1455

FAA-CT-80-41
Distance Measuring Equipment Traffic-Loading Capacity Investigation.
(FAA-RD-80-100)
AD-A091 977/9 1412

FEDERAL AVIATION ADMINISTRATION, WASHINGTON, DC. OFFICE OF AVIATION MEDICINE.

FAA-AM-80-9
Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
AD-A092 268/2 1328

FEDERAL AVIATION ADMINISTRATION, WASHINGTON, DC. OFFICE OF AVIATION SAFETY.

FAA-ASF-80-4-VOL-1
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394

FAA-ASF-803
Summary of Aviation Safety Program Resumes. Cabin Safety.
AD-A091 938/1 1288

FEDERAL AVIATION ADMINISTRATION, WASHINGTON, DC. OFFICE OF ENVIRONMENT AND ENERGY.

FAA/EE-80-40
The Need for Airport Noise Monitoring Systems. Their Uses, and Value in Promoting Civil Aviation.
AD-A092 240/1 1290

FEDERAL AVIATION ADMINISTRATION, WASHINGTON, DC. OFFICE OF MANAGEMENT SYSTEMS.

Census of U.S. Civil Aircraft, Calendar Year 1978.
AD-A092 414/2 1288

FEDERAL LAB. CONSORTIUM.

The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
(NSF/RA-800263)
PB81-122988 1299

National Resource Center Operational Feasibility and Use Study, Volume 1,
(NSF/RA-800270)
PB81-125304 1299

National Resource Center Operational Feasibility and Use Study, Volume 2, Appendix D,
(NSF/RA-800271)
PB81-125312 1299

FERMI NATIONAL ACCELERATOR LAB., BATAVIA, IL.

Protection for Low Current Superconducting Coils Wound with Insulated Strand Cable.
CONF-800980-20 1352

FISH AND WILDLIFE SERVICE, SEATTLE, WA.

Reprint: Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
(NOAA-80101509-1)
PB81-120685 1340

FLORIDA STATE UNIV., TALLAHASSEE. DEPT. OF BIOLOGICAL SCIENCE.

Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
(EPA-600/J-80-084)
PB81-126591 1316

FLORIDA STATE UNIV., TALLAHASSEE. DEPT. OF CHEMISTRY.

Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
(EPA-600/J-80-085, ERL.GB-J0070)
PB81-125676 1322

FLORIDA UNIV., GAINESVILLE.

Some Extensions of the Nerlove-Press Model.
(CNA-PP-291)
AD-A091 946/4 1375

FLORIDA UNIV., GAINESVILLE. DEPT. OF ORTHOPAEDICS.

Assessment of Non-invasive Methods of Measuring Bone Repair in Naval Casualty Victims.
AD-A092 145/2 1318

FLOW INDUSTRIES, INC., KENT, WA.

FLOW TECHNOLOGY-131
Field Test of Hydraulic Borehole Mining Systems in Shallow Uranium Sands.
(BUMINES-OFR-136-80)
PB81-128969 1349

FLUIDYNE ENGINEERING CORP., MINNEAPOLIS, MN.

MHD Air Heater Development Technology. Progress Report, November 26, 1979-March 31, 1980.
DOE/ET/15602-T1 1364

FORAS FORBARTHA, DUBLIN (IRELAND).

Dimensional Co-ordination in Building (Comhordu Toiseach,san bhFoirgniocht).
PB81-122509 1394

FORD, BACON AND DAVIS, INC., NEW YORK.

Energy Emergency Contingency Plan.
(UMTA-NY-09-0054-80-1)
PB81-128704 1363

FOREIGN TECHNOLOGY DIV., WRIGHT-PATTERSON AFB, OH.

FTD-ID(RS)T-0936-80-VOL-16-1
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 1--Translation.
AD-A092 090/0 1318

FTD-ID(RS)T-0936-80-VOL-16-2
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 2--Translation.
AD-A092 091/8 1318

FTD-ID(RS)T-0936-80-VOL-16-3
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 3--Translation.
AD-A092 092/6 1318

FTD-ID(RS)T-0936-80-VOL-16-4
Experience of Soviet Medicines in a Great Patriotic War, 1941-1945. Volume 16, Section 4--Translation.
AD-A092 093/4 1318

FTD-ID(RS)T-1143-80
Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings--Translation.
AD-A092 095/9 1351

FTD-ID(RS)T-1170-80
Laser Light Fiber Communication--Translation.
AD-A092 096/7 1407

FTD-ID(RS)T-1190-80
A 20 Years' Survey of Laser Science and Technology in China. II--Translation.
AD-A092 097/5 1439

FTD-ID(RS)T-1228-80
Ways for Providing a High-Speed Analog-to-Digital Converter with Wide Dynamic Range--Translation.
AD-A092 099/1 1359

FTD-ID(RS)T-1233-80
New Principles in Weapons--Translation.
AD-A092 100/7 1402

FOREST PRODUCTS LAB., MADISON, WI.

FSRB-FPL-8
Wood Products Used in Military Construction in the United States - 1962 and 1978.

AD-A092 022/3 1374

FSRB-FPL-9
Wood Products Used in Constructing Conservation and Development Projects by the Corps of Engineers in the United States - 1962 and 1978.
AD-A092 023/1 1374

FSRP-FPL-367
Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388

FSRP-FPL-368
Effect of Cross Grain on Stress Waves in Lumber.
AD-A091 949/8 1374

FSRP-FPL-369
Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
AD-A091 964/7 1374

GENERAL ACCOUNTING OFFICE, WASHINGTON, DC. FINANCIAL AND GENERAL MANAGEMENT STUDIES DIV.

GAO/FGMSD-80-47
Correct Balance of Defense's Foreign Military Sales Trust Fund Unknown.
AD-A091 894/6 1296

GENERAL ATOMIC CO., SAN DIEGO, CA.

CONF-800648-16
GCFR Steam Generator Conceptual Design.
GA-A-15894 1428

CONF-800980-15
Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
GA-A-16013 1416

CONF-800983-1
High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428

CONF-801011-28
Preliminary Radiation Criteria and Nuclear Analysis for ETF.
GA-A-16072 1416

CONF-801011-30
First Wall Engineering and Technology in Fusion.
GA-A-16089 1416

CONF-801011-31
Vacuum Pumping Concepts for ETF.
GA-A-16071 1393

Selenide Isotope Power System Design Review Presentation, November 10-11, 1977.
DOE/ET/33004-T1 1431

Ceramic Materials for Fusion Reactors. Interim Report.
EPRI-AP-1499 1367

Hot Helium Flow Test Facility Summary Report.
GA-A-15885 1427

Gas-Cooled Fast Breeder Reactor. Quarterly Progress Report, February 1-April 30, 1980.
GA-A-15900 1428

Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367

Team One (GA/MCA) Effort of the DOE 12 Tesla Coil Development Program. 12 Tesla ETF Toroidal Field Coil Helium Bath Cooled NbTi Alloy Concept.
GA-A-15974 1416

GENERAL DYNAMICS/FORT WORTH TEX FORT WORTH DIV

Advanced Metallic Air Vehicle Structure Program.
(AFFDL-TR-75-40)
AD-B007 465/8 1289

GENERAL DYNAMICS, SAN DIEGO, CA. CONVAIR AEROSPACE DIV.

High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
(AFFDL-TR-71-61)
AD-886 531/3 1289

GENERAL ELECTRIC CO., BAY SAINT LOUIS, MS. ENGINEERING AND SCIENCE SERVICES LAB.

EA-4D91
Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
(EM-CR-75001)
AD-B004 405/7 1432

GENERAL ELECTRIC CO., LANHAM, MD. SPACE DIV.

80SDS4213
Advanced Satellite Hardware/Software System Study.
(ETL-0225)
AD-A091 959/7 1354

GENERAL ELECTRIC CO., PHILADELPHIA, PA. SPACE DIV.

Design Study for Ground-Based Atmospheric Lidar System.
(AFGL-TR-80-0264)
AD-A091 955/5 1292

Vidicon Modification Study.
(AFATL-TR-76-92)
AD-B015 892/3 1352

GENERAL ELECTRIC CO., SAN JOSE, CA. ADVANCED REACTOR SYSTEMS DEPT.

CONF-801036-5
Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429

GENERAL ELECTRIC CO., SANTA BARBARA, CA. TEMPO.

Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
(USNRDL-TR-67-90(EX))
AD-B951 703/8 1421

Operation GREENHOUSE. Scientific Director's Report, Annex 3.0. The Test of Structures.
(DOE-WT-117(EX))
AD-B951 735/0 1421

Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1,
(DOE-WT-308(EX))
AD-B951 736/8 1426

Operation WIGWAM. Project 4.2. Weapons Assembly.
(DOE-WT-1040(EX))
AD-B951 739/2 1402

Operation PLUMBBOB. Project 2.9. Nuclear Radiation Received by Aircrews Firing the MB-1 Rocket.
(DOE-WT-1418(EX))
AD-B951 740/0 1327

Operation PLUMBBOB. Project 39.1b. Neutron Dosimetry by the Threshold-Detector Technique.
(DOE-WT-1471(EX))
AD-B951 741/8 1327

Operation PLUMBBOB. Project 41.3. Effects of Altitude on Neutron Measurements.
(DOE-WT-1521(EX))
AD-B951 742/6 1421

GENERAL ELECTRIC CO., ST. PETERSBURG, FL. NEUTRON DEVICES DEPT.

Software for Communication Between a Hewlett Packard 9825 Process Control Computer and a Honeywell 66/60 Time Sharing Computer.
GEPP-TIS-534 1357

GENERAL ELECTRIC CO., SUNNYVALE, CA. ADVANCED REACTOR SYSTEMS DEPT.

Gas Reactor International Cooperative Program. HTR-Synfuel Application Assessment.
COO-4057-12 1427

GENERAL ELECTRIC CO., SYRACUSE, NY. HEAVY MILITARY EQUIPMENT DEPT.

Signal Processor for IR Sensors.
AD-B030 997/1 1411

GENERAL ELECTRIC CO., UTICA, NY. AEROSPACE ELECTRONIC SYSTEMS DEPT.

'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
(RADC-TR-72-97-Vol-1)
AD-903 700/3 1411

'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
(RADC-TR-72-97-Vol-2)
AD-903 701/1 1411

Study of Integrated Thermionic Circuits for Aerospace Application.
(AFAL-TR-73-344)
AD-916 881/6 1360

GENERAL ELECTRIC CO., WEST LYNN, MA. AIRCRAFT ENGINE GROUP.

R77AEG012
YJ101-YF-17 Aircraft Prototype Development Summary.
(AFAPL-TR-77-18)
AD-B022 460/0 1455

GENERAL RESEARCH CORP., MCLEAN, VA. OPERATIONS ANALYSIS DIV.

GRC-OAD-CR-178
The SOTAS-Scout-AAH/HELLFIRE System.
AD-A092 147/8 1288

GEOLOGICAL SURVEY, ALBANY, NY. WATER RESOURCES DIV.

USGS/WRD/WRI-80/078
Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
PB81-130676 1386

USGS/WRI-80-77
Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
PB81-130676 1386

GEORGE WASHINGTON UNIV., WASHINGTON, DC. DEPT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE.

Discrete Scattering Approach to Vegetation Modeling.
(ETL-0215)
AD-A092 017/3 1452

GEORGE WASHINGTON UNIV., WASHINGTON, DC. INST FOR MANAGEMENT SCIENCE AND ENGINEERING.

SERIAL-T-431
Convergence Theory for Unconstrained Minimization,
AD-A092 254/2 1376

GEORGIA INST. OF TECH., ATLANTA. SCHOOL OF INFORMATION AND COMPUTER SCIENCE.

GIT-ICS-80/09
Software Project Forecasting,
AD-A091 923/3 1353

GEORGIA STATE UNIV., ATLANTA. DEPT. OF BIOLOGY.

Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
(EPA-600/J-80-087, ERL.GB-J0080)
PB81-126567 1324

GEORGIA UNIV., ATHENS. COLL. OF BUSINESS ADMINISTRATION.

Financial Needs of Small Minority Firms.
PB81-128852 1300

GEORGIA UNIV., ATHENS. DEPT. OF MANAGEMENT.

Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
(AFOSR-TR-80-1176)
AD-A092 370/6 1305

GIBBONEY (RICHARD A.) ASSOCIATES, INC., SILVER SPRING, MD.

RAG-52
Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
AD-A092 275/7 1304

GOETEBORG UNIV. (SWEDEN).

GUNI-10
Metoder foer Bestaemning av Halkfrekventa Vaegstraeckor (Methods for Detecting Road Sections with High Frequency of Ice Formation),
PB81-126290 1385

GUNI-12
Studier av Halka Pa Vaegar (Studies of Slipperiness on Roads),
PB81-128316 1385

GOODYEAR AEROSPACE CORP., AKRON, OH.

GER-16902
STARAN Image Processing.
(ETL-0243)
AD-A091 928/2 1353

GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII SSSR, MOSCOW. INST. ATOMNOI ENERGII.

Mechanism of Electric Conductivity in Beryllium Oxide.
IAE-3151 1450

GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII SSSR, SERPUKHOV. INST. FIZIKI VYSOKIKH ENERGII.

Description of Final States and Infrared Divergences in Quantum Electrodynamics.
IFVE-OTF-79-96 1444

General Solution of Many-Channel Inverse Scattering Problem.
IFVE-OTF-79-139 1444

GRENOBLE-1 UNIV. (FRANCE). INST. DES SCIENCES NUCLEAIRES.

Complete Fusion exp 20 Ne + exp 12 C at 110 MeV.
ISN-78-26 1445

GRIPS JOINT POWERS AGENCY, NAPA, CA.

Peregrine Falcon Study. Final Report.
SAN-2068-1 1388

GRUMMAN AEROSPACE CORP., BETHPAGE, NY.

ADCR-80-1
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288

Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
UCRL-15292 1419

GRUMMAN AEROSPACE CORP., BETHPAGE, NY. RESEARCH DEPT.

Analytical Model for the Turning of Tracked Vehicles in Soft Soils.
(TARADCOM-TR-12522)
AD-A092 277/3 1434

GRUY FEDERAL, INC., HOUSTON, TX.

Investigation and Evaluation of Geopressured-Geothermal Wells.
DOE/ET/28460-5 1345

GTE SYLVANIA, INC., NEEDHAM HEIGHTS, MA. COMMUNICATIONS SYSTEMS DIV.

Speech Algorithm Optimization at 16 KBPS.
AD-A092 010/8 1407

GTE SYLVANIA, INC., NEEDHAM HEIGHTS, MA. ELECTRONIC SYSTEMS GROUP-EASTERN DIV.

Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1406

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1406

HADASSAH MEDICAL SCHOOL, JERUSALEM (ISRAEL). ENVIRONMENTAL HEALTH LAB.

Disinfection of Viruses in Water by Ozone.

AD-A092 252/6 1318

HAHNEMANN MEDICAL COLL. AND HOSPITAL, PHILADELPHIA, PA. DEPT. OF BIOLOGICAL CHEMISTRY.

Chemical and Biochemical Studies of PGBX.
AD-A092 460/5 1315

HAMILTON TEST SYSTEMS, INC., PHOENIX, AZ.

Testing Support for Evaluation of Inspection/Maintenance Issues (Test Group Nos. 6 and 8).
PB81-123499 1389

HANFORD ENGINEERING DEVELOPMENT LAB., RICHLAND, WA.

CONF-800607-88
Failure Analysis of Carbide Fuels under Transient Overpower (TOP) Conditions.
HEDL-SA-2006-FP 1429

CONF-800609-15
State Variable Description of 316 SS Post-Irradiation Mechanical Properties.
HEDL-SA-2174 1429

CONF-800804-27
Experience with Simplified Inelastic Analysis of Piping Designed for Elevated Temperature Service.
HEDL-SA-1933 1428

CONF-800804-28
Seismic Analysis of Piping with Nonlinear Supports.
HEDL-SA-1994-FP 1428

CONF-800804-29
Seismic Transient Analysis of a Containment Vessel with Penetrations.
HEDL-SA-1955 1428

CONF-800804-31
Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428

CONF-800979-8
Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
HEDL-SA-2227-FP 1444

Spent Fuel Data for Waste Storage Programs.
HEDL-TME-79-20 1424

HARRY DIAMOND LABS., ADELPHI, MD.

HDL-SR-80-1
NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
AD-A091 939/9 1421

HDL-TM-80-21
Two-Stage Servovalve Development Using a First-Stage Fluidic Amplifier.
AD-A092 011/6 1393

HDL-TM-80-28
Upgrading the AURORA Simulator.
AD-A092 501/6 1452

HDL-TR-1539
Design of Fluidic Devices for Small Arms Stabilization,
AD-A092 027/2 1435

HDL-TR-1930
A Near-Surface Burst EMP Driver Package for Neutron-Induced Sources.
AD-A091 908/4 1421

HDL-TR-1936
Unstable-Resonator and Output-Coupling Design Study for Diffraction Radiation Generator Near-Millimeter Sources.
AD-A092 502/4 1439

HARVARD UNIV., CAMBRIDGE, MA. DEPT. OF PSYCHOLOGY.

Predictive Models of Human Visual Processes in Aerosystems.
(AFOSR-TR-80-1191)
AD-A092 290/6 1308

HERCULES, INC., CUMBERLAND, MD. ALLEGANY BALLISTICS LAB.

A02010-520-03-007
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
(ARLCD-CR-80022, AD-E400-444)
AD-A092 416/7 1432

HOLMES COUNTY SCHOOL DISTRICT, LEXINGTON, MA.

On-Site Library Training Program for School and Community in an Economically and Culturally Deprived County.
ED-183 162 1298

HONEYWELL, INC., ST. PETERSBURG, FL.

MILES Pressure/Seismic Response Engineering Development of MILES Test Fixture.
(RADC-TR-80-271)
AD-A092 200/5 1400

HOUSTON UNIV., TX.

Basic Studies in the Recovery of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1979-August 31, 1979.
DOE/BC/10083-1 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, December 1, 1979-February 29, 1980.
DOE/BC/10083-7 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, March 1980-May 31, 1980.
DOE/BC/10083-8 1344

Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1980-August 31, 1980.
DOE/BC/10083-9 1344

HOUSTON UNIV., TX. DEPT. OF ELECTRICAL ENGINEERING.

Approximate Linear Regulator and Kalman Filter.
(ARO-14483.12M)
AD-A092 176/7 1376

HOYA CORP., TOKYO (JAPAN).

Investigation on the Damage Threshold of Films Coated on Various Silicate, Fluorophosphate and Phosphate Laser Glasses. Final Report, January 1, 1979-August 29, 1980.
DOE/DP/40096-1 1440

HUGHES AIRCRAFT CO CANOGA PARK CALIF

Aircraft Avionics Tradeoff Study.
(ASD/XR-73-19)
AD-917 204/0 1358

HUGHES AIRCRAFT CO., CULVER CITY, CA. DISPLAY SYSTEMS DEPT.

HAC-P74-59R-Vol-1
Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
(AFAL-TR-74-130-Vol-1)
AD-B004 191/3 1290

HUGHES AIRCRAFT CO., CULVER CITY, CA. RADAR MICROWAVE LAB.

HAC-FR-79-27-850
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359

HAC-REF-E0010
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359

HUMAN INTERACTION RESEARCH INST., LOS ANGELES, CA.

Quality of Worklife Programs: A Preliminary Technology Assessment,
(NSF/PRA-7706495)
PB81-125379 1309

HUMAN RESOURCES RESEARCH ORGANIZATION, ALEXANDRIA, VA.

HUMRRO-FR-D6-74-1
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305

Preliminary Outline of Driver Duties and Tasks for US/FRG MBT-70.
AD-A950 103/2 1434

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section I. Automotive Maintenance.
AD-A950 104/0 1434

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section II. Turret Maintenance.
AD-A950 105/7 1434

Preliminary Outline of Gunner Duties and Tasks for US/FRG MBT-70.
AD-A950 106/5 1436

Preliminary Outline of Crew Duties and Tasks for Operation of the M60A1E1/E2.
AD-A950 107/3 1434

Preliminary Outline of Tank Commander Duties and Tasks for US/FRG MBT-70.
AD-A950 108/1 1434

US/FRG MBT-70 Crew Functional Procedures and Performance Standards.
AD-A950 109/9 1434

IBM FEDERAL SYSTEMS DIV., ARLINGTON, VA.

Division Real Time Applications Report (DIVRAS).
AD-A092 066/0 1402

Division Real Time Applications Report (DIVRAS), Software Functional Description.
AD-A092 067/8 1354

IBM FEDERAL SYSTEMS DIV., GAITHERSBURG, MD.

High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
(AFAL-TR-74-32)
AD-918 880/6 1439

IDAHO NATIONAL ENGINEERING LAB., IDAHO FALLS.

Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422

Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
CONF-800971-2 1427

Experimental Determination of Lower Plenum ECC Injection Effectiveness.
CONF-801102-12 1427

Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424

IIT RESEARCH INST., CHICAGO, IL.

Evaluation of Time Domain EM Coupling Techniques. Volume I.
(RADC-TR-80-251-VOL-1)
AD-A092 031/4 1452

Evaluation of Time Domain EM Coupling Techniques. Volume II.
(RADC-TR-80-251-VOL-2)
AD-A092 032/2 1452

Failure Rates for Fiber Optic Assemblies.
(RADC-TR-80-322)
AD-A092 315/1 1440

ILLINOIS INST. OF TECH., CHICAGO. DEPT. OF CHEMICAL ENGINEERING.

Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
DOE/ER/04445-T1 1336

ILLINOIS UNIV. AT CHICAGO CIRCLE. DEPT. OF MATHEMATICS.

Construction of PBIB Designs with Triangular and L2 Schemes.
(AFOSR-TR-80-1155)
AD-A092 190/8 1376

ILLINOIS UNIV. AT URBANA-CHAMPAIGN.

CONF-800859-5
Theory of Core Excitons.
DOE/ER/01198-1323 1450

Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux,
AD-A092 142/9 1451

Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
(AFOSR-TR-80-1120)
AD-A092 186/6 1369

ILLINOIS UNIV. AT URBANA-CHAMPAIGN. DEPT. OF CHEMISTRY.

Chemiluminescence of Secondary Peroxyesters.
AD-A092 322/7 1334

Chemically Initiated Electron-Exchange Luminescence.
AD-A092 355/7 1334

On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334

Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334

ILLINOIS UNIV. AT URBANA-CHAMPAIGN. DEPT. OF COMPUTER SCIENCE.

UILU-ENG-80-1724
One-Leg Formulas for Stiff Differential Equations.
COO-2383-0070 1357

UIUCDCS-R-80-1013
One-Leg Formulas for Stiff Differential Equations.
COO-2383-0070 1357

ILLINOIS UNIV. AT URBANA-CHAMPAIGN. DEPT. OF ELECTRICAL ENGINEERING.

Near Infrared Gas Lasers.
(AFAPL-TR-78-107)
AD-B036 761/5 1439

ILLINOIS UNIV. AT URBANA-CHAMPAIGN. DEPT. OF SECONDARY EDUCATION.

The Question Episode--Building Block of Teaching with a Computer. The Illinois Series on Educational Application of Computers, No. 4e,
ED-183 184 1305

Tutorial Instruction on a Computer. The Illinois Series on Educational Application of Computers, No. 6e,
ED-183 186 1305

Instructional Games and the Computer-Using Teacher. The Illinois Series on Educational Application of Computers, No. 9e,
ED-183 189 1306

Getting Started in School Computing: Preparing to Purchase. The Illinois Series on Educational Application of Computers, No. 14e,
ED-183 192 1306

Documentation--INFO: A Small Computer Data Base Management System for School Applications. The Illinois Series on Educational Application of Computers, No. 24e,
ED-183 199 1299

Documentation--A Computerized Instructional Resource Management System. The Illinois Series on Educational Application of Computers. No. 26e,
ED-183 200 1306

MC Painting Manual A: User's Guide. The Illinois Series on Educational Applications of Computers, No. 33. Revised Edition,
ED-183 201 1306

ILLINOIS UNIV. AT URBANA-CHAMPAIGN. FUSION STUDIES LAB.

Design Considerations for a Steady State Fusion Reactor's Thermal Energy Dump (TED) With Emphasis on SAFFIRE.
COO-2218-182 1415

ILLINOIS UNIV. AT URBANA-CHAMPAIGN. INST. FOR ENVIRONMENTAL STUDIES.

Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.

(EPA-600/2-80-195)
PB81-120784 1383

ILLINOIS UNIV. AT URBANA-CHAMPAIGN. MECHANICAL ENGINEERING LAB.

UILU-ENG-80-4005
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
(ARO-13797.3-EX, ARO-16719.2-E)
AD-A091 924/1 1454

INCO, INC., MCLEAN, VA.

Aerial Radiometric and Magnetic Survey, San Angelo National Topographic Map: Texas, West Texas Project. Final Report.
GJBX-168(80) 1346

INDIAN LEAD ZINC INFORMATION CENTRE, NEW DELHI.

Cadmium Seminar 1980, Proceedings Held at the Lake Palace Hotel, Udaipur on 26 February 1980.
PB81-124109 1372

INDIANA UNIV. AT BLOOMINGTON. DEPT. OF CHEMISTRY.

TR-80-6
Facile Cleavage of the Mo= Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334

INDIANA UNIV. AT BLOOMINGTON. DEPT. OF MATHEMATICS.

On Schur Optimality.
(AFOSR-TR-80-1117)
AD-A092 185/8 1376

INDIANA UNIV. AT BLOOMINGTON. DEPT. OF PHYSICS.

Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
DOE/ER/02009-139 1443

Theoretical Particle Physics. Progress Report, December 1, 1079-November 30, 1980.
DOE/ER/02009-140 1443

INDUSTRIAL ENVIRONMENTAL RESEARCH LAB., RESEARCH TRIANGLE PARK, NC.

EPA-600/J-80-092
Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383

IERL-RTP-P-261
Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383

INPUT OUTPUT COMPUTER SERVICES, INC., WASHINGTON, DC.

Marketing of Coal Mining Equipment. Evaluation of Present Techniques: Suggestions to Aid Commercialization. Final Report.
DOE/RA/20014-T1 1345

INSTITUTE FOR COMMUNITY DESIGN ANALYSIS, INC., NEW YORK.

Factors Influencing Crime and Instability in Urban Housing Developments,
(HUD-0001789)
PB81-128670 1309

INSTITUTE FOR DEFENSE ANALYSES, ARLINGTON, VA. PROGRAM ANALYSIS DIV.

IDA-P-1455
Report of Combat Consumption Modeling Improvement Panel.
(IDA/HQ-79-21815, AD-E500-219)
AD-A091 882/1 1401

P-1365
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
(SBIE-AD-E500/033)
AD-B033 848/3 1400

INSTITUTE FOR FOREIGN POLICY ANALYSIS INC CAMBRIDGE MA

U.S. Maritime Interests in the South Atlantic. Appendix I.
AD-B025 005/0 1302

U. S. Maritime Interests in the South Atlantic. Appendix II.
AD-B025 006/8 1302

INSTITUTE OF GAS TECHNOLOGY, CHICAGO, IL.

Formulas for Calculating the Heating Value of Coal and Coal Char: Development, Tests, and Uses.
CONF-800814-25 1452

Gas Saturation in Formation Waters.
(GRI-79/0051)
PB81-130759 1343

INSTITUTO DE FISICA TEORICA, SAO PAULO (BRAZIL).

Non-Orthogonal Harmonic-Oscillator Basis for Three-Body Problems.
IFT-P-11/79 1444

INSTITUUT VOOR MILIEUHYGIENE EN GEZONDHEIDSTECHNIEK TNO, DELFT (NETHERLANDS).

C-375
Warmtebesparing door Isolatie en Stookwijze Bereikt in Twee Woningen-Woning II (Heat Savings by Insulation and Usage of the Heating System Achieved in Two Houses).
PB81-125197 1363

INTERAND CORP CHICAGO ILL

GS-7301
INTERAND Target Annotation System.
(AFAL-TR-74-66)
AD-B001 109/8 1435

INTERCOMP RESOURCE DEVELOPMENT AND ENGINEERING, INC., HOUSTON, TX.

Evaluation of Data Gathered from Unminable Coal Seams. Final Report.
DOE/MC/10641-T1 1345

INTERNATIONAL ATOMIC ENERGY AGENCY, VIENNA (AUSTRIA).

Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370

Effect of Thermal Neutron Irradiation on the Elastic Moduli and Structure of Boron-Containing Crystals. Final Report for the Period 1 October 1976-30 September 1979.
IAEA-R-1800-F 1450

Moessbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371

INTERNATIONAL ATOMIC ENERGY AGENCY, VIENNA (AUSTRIA). INTERNATIONAL NUCLEAR DATA COMMITTEE.

BARC-1000
ENDF/B Based 27-Group Cross-Sections for Some Rare-Earth and Concrete Elements.
INDC(IND)-25/GV 1422

INTERNATIONAL LASER SYSTEMS, INC., ORLANDO, FL.

MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.
AD-A092 266/6 1304

MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan,
(NAVTRAEQUIPC-76-C-0116-2)
AD-A092 267/4 1304

MAGLAD. Trainer Engineering Report Demonstration Results.
(NAVTRAEQUIPC-76-C-0116-3)
AD-A092 477/9 1305

INTERNATIONAL RESEARCH AND DEVELOPMENT CORP., MATTAWAN, MI.

Acute Oral Toxicity Studies in Rats and Rabbits,
(HUD-0001560)
PB81-139339 1329

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two Year Oral Toxicity Study in Rats. Report Number 2E.
(HUD-0001561)
PB81-139347 1329

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two year Oral Toxicity Study in Rats. Report Number 2F.
(HUD-0001562)
PB81-139354 1330

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. One Year Oral Toxicity Study in Monkeys. Report Number 3E.
(HUD-0001563)
PB81-139362 1330

IOWA INST. OF HYDRAULIC RESEARCH, IOWA CITY.

Reprint: Ship Centerplane Source Distribution.
AD-A092 431/6 1392

IOWA UNIV., IOWA CITY. DEPT. OF PHYSICS AND ASTRONOMY.

Reprint: The Volume Emissivity of Type III Radio Bursts.
AD-A091 895/3 1292

Reprint: A Test of Two Theories for the Low-Frequency Cutoffs of Nonthermal Continuum Radiation.
AD-A092 086/8 1293

ISRAEL ATOMIC ENERGY COMMISSION, BEERSHEBA. NUCLEAR RESEARCH CENTER-NEGEV.

Computer Program for the Determination of X-Ray Reflections from a Randomly Oriented Polycrystalline Sample by Diffractometer.
NRCN(TN)-023 1437

ITT AEROSPACE/OPTICAL DIV., FORT WAYNE, IN.

Dynamic Color Scanner System.
(AFAL-TR-74-151)
AD-B015 629/9 1352

JAPAN ATOMIC ENERGY RESEARCH INST., TOKYO.

Zircaloy Cladding Embrittlement Due to Steam Oxidation in Stagnant Steam Condition.
JAERI-M-8081 1371

Metallurgical and Environmental Factors Influencing Creep Behaviour of Hastelloy-X.
JAERI-M-8153 1371

Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424

Oxidation Kinetics and Spallation of Oxide Film of the Structural Metal in HTR Helium under Thermal Cycles.
JAERI-M-8210 1371

Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420

Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454

Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371

JAYCOR, DEL MAR, CA.

One-Dimensional Model Calculations of EBT-P Performance.
DOE/ER/53092-T1 1415

Wave Heating Models for Ion-Cyclotron Heating in EBT-S.
DOE/ER/53092-T2 1415

Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415

JAYCOR, WOBURN, MA.

JAYCOR-PSD-200-80-008FR
A Comparison Study and Software Implementation of NORDA Ocean Models.
AD-A092 424/1 1341

JOHN F. KENNEDY SCHOOL OF GOVERNMENT, CAMBRIDGE, MA.

Regulating Hospital Capital Investment: The Experience in Massachusetts. Executive Summary.
(NCHSR-80-61)
PB81-130544 1321

Regulating Hospital Capital Investment: The Experience in Massachusetts. Final Report.
(NCHSR-80-62)
PB81-130551 1321

JOHN F. KENNEDY SCHOOL OF GOVERNMENT, CAMBRIDGE, MA. INST. OF POLITICS.

Seminar on Transition and Leadership for Newly-Elected Mayors. Final Report on Fall, 1977 Program.
(HUD-0001239)
PB81-138984 1307

JOHNS HOPKINS MEDICAL INSTITUTIONS, BALTIMORE, MD. HEALTH SERVICES RESEARCH AND DEVELOPMENT CENTER.

Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
(NCHSR-80-60)
PB81-130510 1321

JOHNS HOPKINS UNIV., BALTIMORE, MD. CHESAPEAKE BAY INST.

CBI/SR-78
On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
PB81-132094 1340

REF-80-1
On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
PB81-132094 1340

JOHNS HOPKINS UNIV., LAUREL, MD. APPLIED PHYSICS LAB.

Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay.
(PPSP/JHU/PPSE-T-14)
PB81-131765 1317

JOHNS HOPKINS UNIV., SILVER SPRING, MD. APPLIED PHYSICS LAB.

APL/JHU/RAD-7718-01
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
(ARCSL-CR-80046, AD-E410-335)
AD-A092 378/9 1293

JOINT INST. FOR NUCLEAR RESEARCH, DUBNA (USSR).

Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371

JOINT INST. FOR NUCLEAR RESEARCH, DUBNA (USSR). LAB. OF COMPUTING TECHNIQUES AND AUTOMATION.

Calculation of Energy Levels of mu -Mesic Molecules of Hydrogen Isotopes Using a Continuous Analog of the Newton Method and Subspace Iteration Method.
JINR-R-4-12671 1339

JOINT INST. FOR NUCLEAR RESEARCH, DUBNA (USSR). LAB. OF HIGH ENERGY.

Monotonous Braking of High Energy Hadrons in Nuclear Matter.

JINR-E-1-12086 1445

Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
JINR-R-1-12125 1445

JOINT INST. FOR NUCLEAR RESEARCH, DUBNA (USSR). LAB. OF NUCLEAR PROBLEMS.

Elastic Pd and Quasifree A(p, Nd)B Scattering at Intermediate Energies.
JINR-E-2-12369 1445

JOINT INST. FOR NUCLEAR RESEARCH, DUBNA (USSR). LAB. OF THEORETICAL PHYSICS.

Suggestion About the Absence of the Phase Transition, Vacuum Degeneration, Spontaneous Symmetry Breaking and Zero-Mass Goldstone-Bosons in QFT Models of the Type Gphi exp 4.
JINR-E-2-12637 1445

Structure of Representations of Conformal Supergroup in the OSp(1,4) Basis.
JINR-R-2-12670 1449

Discrete Subgroups of the Three-Dimensional Rotation Group.
JINR-R-5-12459 1449

JUNTA DE ENERGIA NUCLEAR, MADRID (SPAIN).

Plasmator. A Numerical Code for Simulation of Plasma Transport in Tokamaks.
JEN-459 1417

KAITZ (EDWARD M.) AND ASSOCIATES, INC., WASHINGTON, DC.

EMK-80-2-VOL-1
Overhead Costs and Rates in the U.S. Defense Industrial Base. Volume 1.
AD-A091 963/9 1299

KAMAN AVIDYNE, BURLINGTON, MA.

KA-TR-158
FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
(DNA-4825F)
AD-A092 143/7 1421

KA-TR-176
Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
(DNA-5155F)
AD-A091 978/7 1435

KANSAS UNIV./CENTER FOR RESEARCH, INC., LAWRENCE. REMOTE SENSING LAB.

CRINC/RSL-TR-393-2
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
(ETL-0234)
AD-A092 077/7 1412

KENTUCKY BUREAU OF HIGHWAYS, LEXINGTON. DIV. OF RESEARCH.

RR-535
Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388

RR-540
Propagation of Traffic Noise.
PB81-123523 1389

KENTUCKY UNIV., LEXINGTON. DEPT. OF MATHEMATICS.

State Space Models for Gaussian Stochastic Processes.
(AFOSR-TR-80-1182)
AD-A092 388/8 1377

KERNFORSCHUNGSANLAGE JUELICH G.M.B.H. (GERMANY, F.R.). INST. FUER KERNPHYSIK.

Induced Isospin Mixing in Direct Nuclear Reactions.
Juel-Spez-47 1445

KERNFORSCHUNGSZENTRUM KARLSRUHE G.M.B.H. (GERMANY, F.R.). ENTWICKLUNGSGRUPPE KERNMATERIALSICHERUNG.

EUR-6400E
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
KFK-2860 1429

EUR-6401e
As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429

KERNFORSCHUNGSZENTRUM KARLSRUHE G.M.B.H. (GERMANY, F.R.). PROJEKT SCHNELLER BRUETER.

Status of the Nuclear Data Library KEDAK-3. July 1979.
KFK-2386/I 1445

KERNFORSCHUNGSZENTRUM KARLSRUHE G.M.B.H. (GERMANY, F.R.). PROJEKT SPALTSTOFFFLUSSKONTROLLE.

EUR-6402e
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429

KERNFORSCHUNGSZENTRUM KARLSRUHE G.M.B.H. (GERMANY, F.R.). PROJEKT WIEDERAUFARBEITUNG UND ABFALLBEHANDLUNG.

CONF-770907-9
Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429

KOZPONTI FIZIKAI KUTATO INTEZET, BUDAPEST (HUNGARY).

HOTRAN-3 Program for Reactor Core Thermohydraulic Studies in the Three-Channel Approximation.
KFKI-1979-26 1428

Tetrads of Observers and Einstein's Equations.
KFKI-1979-65 1449

Manifestation of the Frustration Effect in S= 1/2 Quantum Spin Systems.
KFKI-1980-03 1451

LAMONT-DOHERTY GEOLOGICAL OBSERVATORY, PALISADES, NY.

LDGO-2968
Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348

LDGO-2992
Reprint: Aragonite from Deep Sea Ultramafic Rocks.
AD-A091 967/0 1342

LDGO-3007
Reprint: Seafloor and Near-Surface Sound Velocities from Barents Sea Sonobuoy Data.
AD-A091 966/2 1436

LDGO-3025
Reprint: Planktonic Microfossils and the Recognition of Ancestors.
AD-A092 508/1 1342

LAWRENCE LIVERMORE NATIONAL LAB., CA.

CONF-800555-3
Recent Laser-Plasma Interaction Experiments at the Lawrence Livermore National Laboratory.
UCRL-83794 1419

CONF-801011-4
Consistent HYLIFE Wall Design That Withstands Transient Loading Conditions.
UCRL-84271 1419

CONF-801011-6
Technology of Direct Conversion for Mirror Reactor End-Loss Plasma.
UCRL-84235 1419

CONF-801011-7
MFTF-Progress and Promise.
UCRL-85002 1420

CONF-801011-8
ICF ETF And Its Engineering Development Requirements.
UCRL-84275 1419

CONF-801011-12
Parametric Analysis of Stress in the ICF HYLIFE Converter Structure.
UCRL-84272 1419

CONF-801011-13
Buildup Studies of a Tandem Mirror Reactor with Inboard Thermal Barriers.
UCRL-84233 1419

CONF-801037-19
Recent Advances in Pt Coating of Microspheres by a Batch Magnetron Sputtering Process.
UCRL-84478 1420

CONF-801037-20
Metallic Coating of Microspheres.
UCRL-84463 1420

CONF-801208-2
Impact of Land Use on Solar Industrial Process Heat for the Food Processing Industry.
UCRL-85019 1388

Technical Evaluation of the Proposed Technical Specification Change for the Arkansas Nuclear Power Station, Unit 2.
UCID-18676 1422

Technical Evaluation of the Noise and Isolation Testing of the Reactor Protection System for the Davis Besse Nuclear Power Station, Unit 1.
UCID-18683 1428

Preliminary Comparisons Between Measurements and Model Calculations for the TMI Venting of exp 85 Kr.
UCID-18783 1426

Numerical Solution of Initial-Value Problems in Plasma Physics.
UCRL-85033 1448

LEE (J. S.) ASSOCIATES, INC., ARLINGTON, VA.

JTR-80-02
Multi-Sensor Detection Study.
AD-A091 954/8 1358

LEWIS AND CLARK COLL., PORTLAND, OR. NATURAL RESOURCES LAW INST.

The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
(W81-00317, OWRT-C-80093-P(8493)(1))
PB81-138125 1387

The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
(W81-00318, OWRT-C-80093-P(8403)(2))
PB81-138133 1387

The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
(W81-00320, OWRT-C-80093-P(8403)(4))
PB81-138158 1387

The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
(W81-00321, OWRT-C-80093-P(8403)(5))
PB81-138166 1387

LITERACY VOLUNTEERS, INC., SYRACUSE, NY.

National Endowment for the Humanities Bibliography of Humanistic Reading for Grade Levels 1-8.
ED-183 160 1298

LITTLE (ARTHUR D.), INC., CAMBRIDGE, MA.

ADL-C-74100-1
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
(AFFDL-TR-72-88)
AD-907 360/2 1379

ADL-C-83918
Study of the Slate Mining Industry of Vermont/New York.
(BUMINES-OFR-125-80)
PB81-128936 1300

Development of a Temperature Controller for a Vuilleumier (VM) Cycle Power Cylinder.
(AFFDL-TR-75-99)
AD-B007 816/2 1378

Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
(EPA-600/2-80-203)
PB81-121154 1383

LOCKHEED-CALIFORNIA CO., BURBANK.

CONF-7505145-1
100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
DOE/NASA/9235-75/3 1362

LOCKHEED ENGINEERING AND MANAGEMENT SERVICES CO., INC., LAS VEGAS, NV. REMOTE SENSING LAB.

Summary of the Western Energy Overhead Monitoring Project.
(EPA-600/4-80-051)
PB81-129009 1385

LOCKHEED MISSILES AND SPACE CO., INC., SUNNYVALE, CA.

Laser Annealing of Ion Implanted CZ Silicon for Solar Cell Junction Formation. Quarterly Report No. 2.
DOE/JPL/955696-80/2 1365

LOGICON, INC., SAN DIEGO, CA. TACTICAL AND TRAINING SYSTEMS DIV.

Ground Controlled Approach Controller Training System (GCA-CTS) Student Guide.
(NAVTRAEQUIPC-77-C-0162-4)
AD-A091 930/8 1303

LOGISTICS STUDIES OFFICE (ALMC), FORT LEE, VA.

Security Assistance Data Element Catalog (SADEC).
AD-A092 166/8 1355

LOS ALAMOS SCIENTIFIC LAB., NM.

CONF-800942-11
Intermediate Structure in Unresolved Resonances of Fissile and Fertile Nuclides.
LA-UR-80-2675 1445

CONF-800979-5
Systematics of S- and P-Wave Radiation Widths.
LA-UR-80-2702 1423

CONF-800979-6
Prompt Fission Neutron Spectra and Anti nu p.
LA-UR-80-2707 1423

CONF-801004-3
Verification of Timing Routines.
LA-UR-80-3099 1357

ONWI/Sub-80/E511-01200-7
Fission Product Release. Progress Report, April 1-June 30, 1980.
LA-8539-PR 1424

Technology Assessment of Wind Energy Conversion Systems.
DOE/EV-0103 1365

Ceramic Heat Pipe Development. Quarterly Report, April 1, 1980-June 30, 1980.
DOE/TIC-11293 1379

CMB-8 Material Balance System.
LA-8194-M 1430

Abstract Model of the Finite Element Method.
LA-8468-T 1377

Theory of the Arc Discharge in Air Blast Breakers.
LA-8488-T 1417

Applied Nuclear Data Research and Development. Progress Report, April 1-June 30, 1980.
LA-8524-PR 1445

LOS ANGELES-ORANGE COUNTY METROPOLITAN AREA PROJECT, WHITTIER, CA.

Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area.
PB81-132151 1386

Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area. Appendices.

PB81-132169 1386

LOUGHBOROUGH UNIV. OF TECHNOLOGY (ENGLAND). DEPT. OF MATHEMATICS.

MATH-RES-123
A Non-Parametric Approach to the Change-Point Problem,
PB81-132854 1377

LOUISIANA STATE UNIV., BATON ROUGE. COASTAL STUDIES INST.

TR-309
Reprint: High-Precision Instrumentation System for Sea-Bed Pressure Measurements in Muddy Sediments.
AD-A091 974/6 1348

LUMLEY (JOHN L.), ITHACA, NY.

Reprint: Some Comments on the Energy Method.
AD-A091 944/9 1438

LYON-1 UNIV., VILLEURBANNE (FRANCE). INST. DE PHYSIQUE NUCLEAIRE.

Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
LYCEN-7868 1373

SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
LYCEN-7923 1451

Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371

Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337

Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446

M AND S COMPUTING, INC., HUNTSVILLE, AL.

78-019
Target Recognition System Design: Computational Structures with Response Time Characteristics Dictated by the Operational Environment.
(DRSMI-T-CR-79-23)
AD-B041 709/7 1413

MAGNAVOX CO FORT WAYNE IND FORT WAYNE DIV

FWD74-543
Low Loss Wideband Acoustic Delay Line.
(AFAL-TR-74-122)
AD-923 650/6 1352

MARTIN MARIETTA AEROSPACE, DENVER, CO. DENVER DIV.

MCR-80-500
SOLCOST Support and Maintenance. Quarterly Technical Status Report.
DOE/ET/20108-T1 1357

Functional Capabilities Description (FCD) for the Corps Information Management System (CIMS).
AD-A092 070/2 1297

MARYLAND UNIV. BALTIMORE COUNTY, BALTIMORE. DEPT. OF MATHEMATICS.

Detection, Estimation, and Control on Group Manifolds.
(AFOSR-TR-80-1055)
AD-A092 386/2 1377

MARYLAND UNIV., COLLEGE PARK.

Illness Behavior in Mid-Life Women. Executive Summary.
(NCHSR-80-57)
PB81-125536 1309

MARYLAND UNIV., COLLEGE PARK. COMPUTER SCIENCE CENTER.

Architecture for Higher Level Digital Image Processing.
AD-A091 994/4 1354

Architecture for Higher Level Digital Image Processing.
AD-A092 153/6 1355

MARYLAND UNIV., COLLEGE PARK. COMPUTER VISION LAB.

TR-874
Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354

TR-900
Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354

TR-906
Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354

TR-940
Surfaces in Three-Dimensional Digital Images.
(AFOSR-TR-80-1154)
AD-A092 075/1 1354

MARYLAND UNIV., COLLEGE PARK. WATER RESOURCES RESEARCH CENTER.

TR-58
Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
(WB1-00508, OWRT-A-048-MD)
PB81-127532 1329

MASSACHUSETTS INST. OF TECH., CAMBRIDGE.

Normalizing the Renormalization Group in Deep Inelastic Leptoproduction. CTP No. 878.
CONF-800724-44 1443

Difficult States in the Quark Model: Glueballs and the Pion. CTP No. 874.
CONF-800724-45 1443

Delta -Nucleus Interactions. CTP No. 887.
CONF-800863-3 1443

Mechanism for Diffusion Induced Grain Boundary Migration.
DOE/ER/05002-13 1370

Group Representation of Bicrystal Invariant Translations with an Application to the Topology of Secondary Grain Boundary Dislocations.
DOE/ER/05002-14 1370

Ballooning Mode Second Stability Region for Sequences of Tokamak Equilibria.
DOE/ET/53073-T1 1416

MASSACHUSETTS INST. OF TECH., CAMBRIDGE. ARTIFICIAL INTELLIGENCE LAB.

AI-M-507
A Hypothetical Monologue Illustrating the Knowledge Underlying Program Analysis.
AD-A092 294/8 1356

MASSACHUSETTS INST. OF TECH., CAMBRIDGE. DEPT. OF CHEMISTRY.

One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
(AFOSR-TR-80-1143)
AD-A092 189/0 1333

Low-Cost Solar Array Project. Task I. Silicon Material. Investigation of the Hydrogenation of SiCl sub 4.
DOE/JPL/955382-79/6 1365

MASSACHUSETTS INST. OF TECH., CAMBRIDGE. DEPT. OF MATERIALS SCIENCE AND ENGINEERING.

Molecular Fraction Behavior in Oriented Polymers.
(ARO-13630.3-MSX)
AD-A092 241/9 1373

An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
(ARO-16219.1-MS)
AD-A092 251/8 1367

MASSACHUSETTS INST. OF TECH., CAMBRIDGE. ENERGY LAB.

MITNE-231
Prospects for the Recovery of Uranium from Seawater. Final Report.
MIT-EL-80-001 1371

MASSACHUSETTS INST. OF TECH., CAMBRIDGE. RESEARCH LAB. OF ELECTRONICS.

Reprint: A Technique for the Evaluation of Circularly Symmetric Two-Dimensional Fourier Transforms and Its Application to the Measurement of Ocean Bottom Reflection Coefficients.
AD-A091 879/7 1436

MASSACHUSETTS INST. OF TECH., LEXINGTON. LINCOLN LAB.

CONF-801203-1
Photovoltaic Power System at Natural Bridges National Monument.
DOE/ET/20279-105 1365

MS-5263
Reprint: Image Restoration by Short Space Spectral Subtraction.
(ESD-TR-80-178)
AD-A092 298/9 1358

TN-1980-37
A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
(ESD-TR-80-92)
AD-A092 128/8 1358

TST-26
Design Considerations for the Infrared Airborne Radar (IRAR) MTI Subsystem.
(ESD-TR-80-83)
AD-A091 927/4 1411

Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
(ESD-TR-80-71)
AD-A092 113/0 1408

MATHEMATICAL APPLICATIONS GROUP, INC., ELMSFORD, NY.

An Interactive Computer System for Evaluating Coal Mine Illumination.
(BUMINES-OFR-110-80)
PB81-125528 1348

MAX-PLANCK-INST. FUER KERNPHYSIK, HEIDELBERG (GERMANY, F.R.).

CONF-800863-4
New Results on the Spectroscopy and Dynamics of Fission.
DOE/ER/01388-452 1443

MAX-PLANCK-INST. FUER PLASMAPHYSIK, GARCHING (GERMANY, F.R.).

Ignition Experiment - Alternatives.
IPP-4/179 1416

MHD Pressure Losses in Pipeline Systems for Toroidal Fusion Reactors.
IPP-4/180 1417

Maximum Attainable Power Density and Wall Load in Tokamaks Underlying Reactor Relevant Constraints.
IPP-4/182 1417

MCDONNELL DOUGLAS ASTRONAUTICS CO.-EAST, ST. LOUIS, MO.

Advanced Modulator II.
(AFAL-TR-74-17)
AD-922 519/4 1409

MCDONNELL DOUGLAS ASTRONAUTICS CO.-ST. LOUIS, MO. ENGINEERING PSYCHOLOGY DEPT.

MDC-E2305
Dynamic Target Acquisition: Empirical Models of Operator Performance.
(AFOSR-TR-80-1177)
AD-A092 263/3 1308

MCDONNELL DOUGLAS ASTRONAUTICS CO.-WEST, HUNTINGTON BEACH, CA.

MDC-G4163
Gasdynamic Particle Accelerators - An Optimization.
AD-A092 069/4 1395

MCDONNELL DOUGLAS RESEARCH LABS., ST. LOUIS, MO.

Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
(AFOSR-TR-80-1149)
AD-A092 073/6 1450

MEGATEK CORP., SAN DIEGO, CA.

R2018-059-IF-2
Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
(NOSC-TD-365)
AD-A092 297/1 1452

MEMPHIS LIGHT, GAS AND WATER DIV., TN.

Industrial Fuel Gas Demonstration Plant Program. Procurement Schedule for Long-Lead Items (Deliverable No. 48).
DOE/ET/13046-T72 1330

MICHIGAN STATE UNIV., EAST LANSING. DEPT. OF PHYSICS.

Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters.
DOE/ER/14529-1 1422

MICHIGAN UNIV., ANN ARBOR. COMPUTER, INFORMATION AND CONTROL ENGINEERING.

Final Technical Report, 15 September 1975-14 July 1980.
(AFOSR-TR-80-1152)
AD-A091 989/4 1378

MICHIGAN UNIV., ANN ARBOR. DEPT. OF MEDICAL CARE ORGANIZATION.

Determinants and Effects of Organizational Strategies of Control Directed at Quality of Care in Organized Ambulatory Care Settings.
(NCHSR-81-1)
PB81-133613 1322

MICHIGAN UNIV., ANN ARBOR. GREAT LAKES RESEARCH DIV.

Phytoplankton and Physical-Chemical Conditions in Selected Rivers and the Coastal Zone of Lake Michigan, 1972.
COO-2003-36 1322

MICHIGAN UNIV., ANN ARBOR. HIGHWAY SAFETY RESEARCH INST.

UM-HSRI-80-38
Statistical Analysis of the National Crash Severity Study Data.
(DOT-HS-805-561)
PB81-124679 1394

MICHIGAN UNIV., ANN ARBOR. SCHOOL OF PUBLIC HEALTH.

Estimation of Spatial Demand for Hospital Services.
(NCHSR-80-73)
PB81-135790 1322

MIDWEST RESEARCH INST., KANSAS CITY, MO.

Environmental Assessment Data Systems User Guide: Project Profile System.
(EPA-600/8-80-031)
PB81-125825 1299

Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
(WB1-00316, OWRT-C-90005-S(9504)(1))
PB81-127326 1385

MINIMUM WAGE STUDY COMMISSION, WASHINGTON, DC.

A Demographic Profile of Minimum Wage Workers, Working Paper Number 4.
PB81-123713 1307

Exemptions to the Fair Labor Standards Act - Transportation Sector.
PB81-127441 1307

MINNESOTA UNIV., MINNEAPOLIS. LIMNOLOGICAL RESEARCH CENTER.

A Trophic Classification of Minnesota Lakes Based on Lake Sediments.

(W81-00322, OWRT-B-128-MINN(1))
PB81-124141 1343

MITRE CORP., MCLEAN, VA. METREK DIV.

MTR-7535
Concepts for Utilization of Video Discs in Military Applications.
AD-A092 029/8 1398

MONSANTO RESEARCH CORP., DAYTON, OH. DAYTON LAB.

MRC-DA-343-Pt-1
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
(AFAL-TR-73-250-Pt-1)
AD-912 789/5 1360

MRC-DA-343-Pt-2
Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
(AFAL-TR-73-250-Pt-2)
AD-912 790/3 1360

MRC-DA-343-Pt-3
Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
(AFAL-TR-73-250-Pt-3)
AD-912 791/1 1360

MRC-DA-343-Pt-4
Ferrite/Dielectric High Power Phase Shifter Development. Part IV. Arc-Plasma Spray Fabrication and Material Studies.
(AFAL-TR-73-250-Pt-4)
AD-912 792/9 1360

Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379

MONTANA UNIV., MISSOULA.

Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444

MUNICIPAL ENVIRONMENTAL RESEARCH LAB., CINCINNATI, OH.

EPA-600/9-80-062
Wastewater Alternatives for Small Communities,
PB81-131658 1386

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, CLEVELAND, OH. LEWIS RESEARCH CENTER.

NASA-E-455
Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
(NASA-TP-1708, AVRADCOM-TR-80-13)
AD-A092 383/9 1455

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, MOFFETT FIELD, CA. AMES RESEARCH CENTER.

Environmental Impacts of the Satellite Power System (SPS) On the Middle Atmosphere.
DOE/ER/10035-01 1383

NATIONAL ARTS AND THE HANDICAPPED INFORMATION SERVICE, NEW YORK.

Materials from the National Arts and the Handicapped Information Service: Annotated Bibliography. Second Draft.
ED-183 158 1298

NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER, ATLANTIC CITY, NJ.

FAA-NA-78-47
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
(AFAPL-TR-79-2036)
AD-B044 225/1 1289

NATIONAL BUREAU OF STANDARDS, WASHINGTON, DC.

MBS/DIM-64/8
Dimensions/NBS. Volume 64, Number 8, October 1980.
PB81-133654 1397

NBS/SP-500-69
Computer Science and Technology: An Analytic Study of a Shared Device Among Independent Computing Systems.
PB81-125783 1357

NBS/SP-596
Ultrasonic Materials Characterization.
PB81-124984 1396

NBSIR-80-2133
Data Bases Available at the National Bureau of Standards Library,
PB81-132870 1299

Reprint: Space Applications of Superconductivity: Resonators for High Stability Oscillators and Other Applications.
PB81-119844 1353

Reprint: Thermal Effects in Sharp-Particle Contact.
PB81-119851 1367

Reprint: Evaluation of High Efficiency CsI and CuI Photocathodes for Soft X-Ray Diagnostic.
PB81-121006 1353

Reprint: Effect of Particle Impact Angle on Strength Degradation of Glass.
PB81-121493 1368

Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372

Reprint: Strength Degradation of Glass Impacted with Sharp Particles: I, Annealed Surfaces.
PB81-121527 1368

Reprint: Plastic Deformation of Fine-Grained Alumina (Al_2O_3): II, Basal Slip and Nonaccommodated Grain-Boundary Sliding,
PB81-121543 1368

Reprint: Units, Physical,
PB81-121824 1396

Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys,
PB81-121865 1372

Reprint: Calculations of Electron Beam Spreading in Composite Thin Foil Targets,
PB81-126070 1338

Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate $CaHPO_4.2H_2O$ Formation,
PB81-126088 1320

A Mechanism for Incorporation of Carbonate into Apatite,
PB81-126104 1320

Reprint: Ultrasonic Diffraction Technique for Characterization of Fatigue Cracks,
PB81-126112 1397

Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338

Reprint: Some Experimental Problems in the Raman Analysis of Microsamples,
PB81-126138 1338

Reprint: Migration Models for Polymer Additives,
PB81-126146 1323

Reprint: Statistical Thermodynamics of Bulk and Surface Properties of Polymer Mixtures,
PB81-126153 1338

Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts,
PB81-126161 1338

Reprint: Internal Configurations of Span-Constrained Random Walks,
PB81-126179 1377

Reprint: The Lowest Laser-Raman Active Accordion (ALR) Type Oscillations in Crystalline Polymers,
PB81-126187 1339

Reprint: Configurational Properties of Star-Branched Polymers,
PB81-126195 1339

Reprint: Thin Zinc Films on Aluminum,
PB81-126203 1368

Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339

Reprint: Developing Definitive Methods for Human Serum Constituents--A Progress Report from the CAP (College of American Pathologists) NBS Research Associate,
PB81-133316 1326

NATIONAL BUREAU OF STANDARDS, WASHINGTON, DC. NATIONAL ENGINEERING LAB.

NBSIR-80-2144
Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1363

NBSIR-80-2161
A 'Reference Building' Approach to Building Energy Performance Standards for Single-Family Residences.
PB81-135642 1380

NATIONAL COMMUNICATIONS SYSTEM, WASHINGTON, DC.

NCS-TIB-80-5
Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408

NATIONAL INST. FOR ADVANCED STUDIES, WASHINGTON, DC.

Insurance Coverage and Payment Policies. Rapid Turnaround Neighborhood Preservation Research. Task Number 3.
(HUD-0001490)
PB81-139214 1313

NATIONAL INST. ON DRUG ABUSE, ROCKVILLE, MD. DIV. OF RESEARCH.

DHEW/PUB/ADM-80-1014
GC/MS Assays for Abused Drugs in Body Fluids,
PB81-133746 1326

NIDA/RD-80-05
GC/MS Assays for Abused Drugs in Body Fluids,
PB81-133746 1326

NATIONAL MARINE FISHERIES SERVICE, GLOUCESTER, MA. GLOUCESTER LAB.

Reprint: Instrument for Determining Depth of Dehydration of Frozen Fish,
(NOAA-80101509-5)
PB81-120727 1323

NATIONAL MARINE FISHERIES SERVICE, SEATTLE, WA. NORTHWEST AND ALASKA FISHERIES CENTER.

Reprint: Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
(NOAA-80101509-3)
PB81-120701 1340

Reprint: The Snail Resource of the Eastern Bering Sea and Its Fishery,
(NOAA-80101510-2)
PB81-120750 1317

NATIONAL MARITIME RESEARCH CENTER-KINGS POINT, NY. COMPUTER AIDED OPERATIONS RESEARCH FACILITY.

CAORF-50-7810-01-VOL-1
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
(MA-RD-930-80033-VOL-1, USCG-D-12-80-VOL-1)
AD-A091 926/6 1303

CAORF-50-7810-01-VOL-2
Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
(MA-RD-930-80033-VOL-2, USCG-D-12-80-VOL-2)
AD-A092 177/5 1304

NATIONAL MATERIALS ADVISORY BOARD (NRC), WASHINGTON, DC.

NMAB-367-1
The Investigation of Grain Elevator Explosions.
PB81-123549 1291

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, ANN ARBOR, MI. GREAT LAKES ENVIRONMENTAL RESEARCH LAB.

GLERL-CONTRIB-222
New Observations on the Daily Variations of Natural Ice Albedo.
(NOAA-80110401)
PB81-132789 1350

NOAA-TM-ERL-GLERL-27
New Observations on the Daily Variations of Natural Ice Albedo.
(NOAA-80110401)
PB81-132789 1350

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, BOULDER, CO. ENVIRONMENTAL RESEARCH LABS.

Evaluation of a Meteorological Airborne Pulse Doppler Radar.
(FAA-RD-80-98)
AD-A092 276/5 1412

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, BOULDER, CO. WAVE PROPAGATION LAB.

HF (High Frequency) Radar Measurements of Circulation in the Eastern Strait of Juan de Fuca Near Protection Island (July, 1979).
(EPA-600/7-80-129)
PB81-127490 1342

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, MIAMI, FL. RESEARCH FACILITIES CENTER.

NOAA/TM/ERL/RFC-6
In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
(NOAA-80110407)
PB81-132771 1295

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, ROCKVILLE, MD.

ESSA-NDSR-70-1
The Lubbock, Texas, Tornado May 11, 1970. A Report to the Administrator.
(NOAA-79100904)
PB81-137788 1295

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, SEATTLE, WA. PACIFIC MARINE ENVIRONMENTAL LAB.

CONTRIB-418
Reprint: Recent Observations of a Large Eddy in the Gulf of Alaska.
(NOAA-80101509-4)
PB81-120719 1342

NATIONAL RESEARCH COUNCIL, WASHINGTON, DC. BOARD ON SCIENCE AND TECHNOLOGY FOR INTERNATIONAL DEVELOPMENT.

CIR/BOSTID-80/SRI
Postharvest Food Losses in Sri Lanka; Report of a Workshop, 11-16 February 1980.
PB81-129975 1323

NATIONAL SCIENCE FOUNDATION, WASHINGTON, DC. ENGINEERING AND APPLIED SCIENCE.

Abstracts of Ongoing NSF Research Related to the Eruption of Mt. St. Helens.
PB81-132045 1343

NATIONAL SECURITY AFFAIRS INST., WASHINGTON, DC.

Defense Planning and Arms Control. Proceedings of a Special NSAI Conference, 12-14 June 1980, National Defense University, Washington, DC.
AD-A092 168/4 1400

NATIONAL TECHNICAL INFORMATION SERVICE, SPRINGFIELD, VA.

The Elderly: Social, Health, and Transportation Problems and Services. 1978-August, 1979 (Citations from the NTIS Data Base).
PB81-801573 1315

The Elderly: Social, Health, and Transportation Problems and Services. September, 1979-December, 1980 (Citations from the NTIS Data Base).
PB81-801581 1315

Ice Fog. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801615 1350

Fishways: Design and Operation. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801623 1317

Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387

NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION, BOULDER. CO. INST. FOR TELECOMMUNICATION SCIENCES.

Environmental Assessment for the Satellite Power System: Concept Development and Evaluation Program - Effects of Ionospheric Heating on Telecommunications.
DOE/ER/10003-T2 1383

NATIONAL TIMBER RESEARCH INST., PRETORIA (SOUTH AFRICA).

CSIR/SR/HOUT-175
Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367

CSIR/SR/HOUT-179
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374

ISBN-0-7988-1613-9
Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367

ISBN-0-7988-1745-3
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374

NATIONAL TRAINING AND INFORMATION CENTER, CHICAGO, IL.

Summary of Findings on Home Mortgage Disclosure Act (HMDA) Data Users.
(HUD-0001506)
PB81-139230 1299

NATIONAL WATER WELL ASSOCIATION, WORTHINGTON, OH.

Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction. Volume 1.
BNL-51224(V.1) 1344

Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction.
BNL-51224(V.2) 1344

NATIONAL WEATHER SERVICE, SALT LAKE CITY, UT. WESTERN REGION.

NOAA-NDSR-70-2
Arizona Floods of September 5 and 6, 1970. A Report to the Administrator.
(NOAA-79100903)
PB81-138067 1394

NAUCHNO-ISSLEDOVATEL'SKII INST. ELEKTROFIZICHESKOI APPARATURY, LENINGRAD (USSR).

Peculiarities of Radiation Heat Transfer of Structural Elements of High-Temperature Physical Installations.
NIIEFA-P-A-0424 1417

Analysis of the System of Poloidal Fields in the "T-10M" Device.
NIIEFA-P B-0430 1417

NAVAL ACADEMY, ANNAPOLIS, MD.

USNA-TSPR-109
Deep Level Transient Spectroscopy as an Experimental Technique.
AD-A091 941/5 1449

NAVAL AEROSPACE MEDICAL RESEARCH LAB., PENSACOLA, FL.

Annotated Bibliography of Reports. Supplement Number 11, 1 October 1978 - 30 September 1979.
AD-A092 160/1 1318

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA.

Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978.
AD-A092 043/9 1454

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA. AIRCRAFT AND CREW SYSTEMS TECHNOLOGY DIRECTORATE.

NADC-80208-60
Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
AD-A092 292/2 1288

NAVAL AIR ENGINEERING CENTER, LAKEHURST, NJ. ENGINEERING DEPT. (SI).

NAEC-ENG-6703-REV-16
Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16,
AD-A092 392/0 1392

NAVAL BIOSCIENCES LAB., OAKLAND, CA.

Reprint: Ketoconazole in Early and Late Murine Coccidioidomycosis.
AD-A091 921/7 1317

NAVAL COASTAL SYSTEMS CENTER, PANAMA CITY, FL.

NCSC-TR-353-80
MK 11 and MK 12 CO2 Scrubber Development.
AD-A092 314/4 1323

NAVAL DENTAL RESEARCH INST, GREAT LAKES, IL.

NDRI-PR-80-13
Summaries of Research, Fiscal Year 1980.
AD-A092 232/8 1318

NDRI-PR-80-14
Reprint: Influence of Interdental Contacts on Periodontal Status.
AD-A092 425/8 1319

NAVAL ENVIRONMENTAL PREDICTION RESEARCH FACILITY, MONTEREY, CA.

NEPRF-TECH PAPER-5-76-CH-2
Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
AD-A092 373/0 1295

NAVAL EXPLOSIVE ORDNANCE DISPOSAL FACILITY INDIAN HEAD MD

NAVEODFAC-TR-199
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433

NAVAL MATERIAL COMMAND, WASHINGTON, DC.

Integrated Logistic Support. Implementation Guide for DoD Systems and Equipments.
AD-A092 167/6 1401

NAVAL MEDICAL RESEARCH UNIT NO. 3, FPO NEW YORK 09527.

NAMRU-3-1195
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

NAMRU-3-1200
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316

NAMRU-3-ACC-1194
Reprint: The Subgenius Persicargas (Ixodoidea; Argasidae; Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
AD-A092 462/1 1316

NAMRU-3-ACC-1197
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318

NAMRU-3-ACC-1198
Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327

NAMRU-3-ACC-1199
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319

NAMRU-3-TR-19/80
Reprint: The Subgenius Persicargas (Ixodoidea; Argasidae; Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
AD-A092 462/1 1316

NAMRU-3-TR-20/80
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319

NAMRU-3-TR-21/80
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318

NAMRU-3-TR-22/80
Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327

NAMRU-3-TR-23/80
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319

NAMRU-3-TR-24/80
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316

NAVAL OCEAN SYSTEMS CENTER, SAN DIEGO, CA.

NOSC/TD-356
Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357

NOSC/TN-577
Advanced Ship System Concepts for Hydrographic Surveying.
AD-A092 374/8 1392

NOSC/TR-574
Hardware and Performance Evaluation: Tethered Float Breakwater Near-Shore Ocean Model.
AD-A092 059/5 1381

NOSC/TR-579
Nonresonant Acoustic Projector Project. Mechanical 5-50 Hz Device Provides Stable Underwater Acoustic Output with Frequency and Amplitude Controllable and Independent of Depth.
AD-A092 181/7 1406

NAVAL ORDNANCE LAB., WHITE OAK, MD.

NOLTR-74-177
A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432

NAVAL ORDNANCE STATION, INDIAN HEAD, MD.

NOS-IHTR-567
Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
AD-B040 437/6 1331

NAVAL POSTGRADUATE SCHOOL, MONTEREY, CA.

NPS52-80-011
An ADA Language Model of the AN/SPY-1A Component of the AEGIS Weapon System.
AD-A092 260/9 1412

NPS-54-80-011
Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
AD-A092 469/6 1396

NPS56-80-013
Brotherhood-in-Arms East German Foreign Policy in Africa 'Kalashnikoffs, not Coca Cola Bring Self-Determination to Angola' Volksarme, 1978.
AD-A092 402/7 1302

NPS-61-80-018
Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440

NPS67-80-005
Study of Gas Dynamic Effects in Non-Uniform High Pressure Electrical Discharges.
AD-A092 413/4 1437

NPS67-80-006
An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456

Analysis of Combustion and Heat Transfer in a Porous Graphite Medium.
AD-A092 094/2 1368

An Evaluation of the Application of ISD to P-3 Pilot Training.
AD-A092 126/2 1304

A Statistical Study of Monthly Storminess ..nd Sea Surface Temperature Anomalies over the North Pacific Ocean.
AD-A092 134/6 1349

Radio Direction Finding on High Frequency Short Duration Signals.
AD-A092 136/1 1410

Design of a System Initialization Mechanism for a Multiple Microcomputer.
AD-A092 137/9 1354

Validation of a Two-Dimensional Primitive Variable Computer Code for Flow Fields in Jet Engine Test Cells.
AD-A092 138/7 1454

Improvement in Tropical Cyclone Forecasts by Multiple Linear Regression Equation Adjustment of Analog Tracks.
AD-A092 139/5 1294

Measurement of Performance Parameters for a FLIR Thermal Imaging System.
AD-A092 140/3 1411

A Case Study Anlaysis of a System Acquisition by a Field Activity.
AD-A092 178/3 1296

Homosexuality and the U.S. Military.
AD-A092 179/1 1308

Design and Implementation of an Integrated Screen-Oriented Text Editing and Formatting System.
AD-A092 180/9 1297

Implementation of the Phase Difference Trace Function for a Circular Array.

AD-A092 195/7 1407

The Enrichment of Smoler's Model of Land Combat.
AD-A092 196/5 1403

Exchange Service Station Gasoline Pumping Operation Simulation.
AD-A092 278/1 1378

Human Resource Management in the Navy: The Specialists' Viewpoint.
AD-A092 279/9 1304

RTC CREDO: Initial Assessment.
AD-A092 280/7 1304

The Iranian Revolution and Its Impact on the Future of Soviet-Iranian Relations: An Assessment.
AD-A092 281/5 1302

Production Rule Systems as an Approach to Interpretation of Ground Sensor Information.
AD-A092 282/3 1355

The Legacy of Ideology in Soviet Foreign Policy Toward the West.
AD-A092 283/1 1302

An Economic and Technical Study on the Feasibility of Using Advanced Joining Techniques in Constructing Critical Naval Marine Structures.
AD-A092 299/7 1390

Reflexive Launch Strategies.
AD-A092 300/3 1400

Detailed Design of the Kernel of a Real-Time Multiprocessor Operating System.
AD-A092 301/1 1356

Calculation of the Oxide Growth Rate of 2-1/4 Cr - 1 Mo Steel in Air and the Subsequent Measurement of the Strain Required to Crack the Oxide.
AD-A092 302/9 1370

An Application of Kalman Filtering to Torpedo Tracking.
AD-A092 303/7 1407

An Interactive Code for a Pressurized Water Reactor Incorporating Temperature and Xenon Feedback.
AD-A092 304/5 1427

Concept Evaluation: Field Feedback Computation of Electromagnetic Scattering.
AD-A092 305/2 1452

Measurement of Pumped Superluminal Electromagnetic Radiation.
AD-A092 306/0 1441

An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
AD-A092 307/8 1368

A General Retention Model Applied to the Naval Aviator.
AD-A092 308/6 1305

Thermal Analysis and Design of Air Cooled Electronic Circuit Boards Using a Desktop Computer.
AD-A092 309/4 1359

Pre-Expended Bin Material Management at Naval Air Rework Facilities.
AD-A092 319/3 1401

Low Frequency Geomagnetic Fluctuations (.04 to 25 Hz) on Land and on the Floor of Monterey Bay.
AD-A092 399/5 1411

Application of Numerical Optimization to Drive Shaft Design.
AD-A092 400/1 1391

A Study of Budget Formulation in the Fleet Marine Force.
AD-A092 401/9 1296

An Attempt to Model the USN Unrestricted Line Officer Promotion Process Using an Adapted Length of Service Markov Model.
AD-A092 403/5 1305

Dynamic Linking in a Microcomputer Environment.
AD-A092 404/3 1356

An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
AD-A092 405/0 1399

Navy Civilian Careers: A Formulation Problem.
AD-A092 406/8 1305

Experimental Study of Contrast Utilizing a Vidicon.
AD-A092 407/6 1351

A Statistical Analysis of Western North Pacific Ocean Tropical Cyclone Danger Area Forecasts.
AD-A092 408/4 1295

An Application of Case-Mix Adjusted Lengths of Stay in Naval Medical Treatment Facility's Output Measurement.
AD-A092 409/2 1319

Ball Obturation of a Spin Stabilized Tubular Projectile.
AD-A092 410/0 1432

Statistical Adjustment of the Hatrack Typhoon Track Forecasting Model.
AD-A092 411/8 1295

Personal, Situational, and Organizational Determinants of Navy Enlisted Attrition.
AD-A092 412/6 1305

An Analysis of the Problems Involved in the Utilization of Merchant Shipping to Support the U.S. Government during Declared Mobilization Situations.
AD-A092 421/7 1401

The Modernization of the Chinese People's Liberation Army: Goals and Problems.
AD-A092 422/5 1400

An Experimental Study of Solid Propellant Deflagration Using High Speed Motion Pictures and Postfire Residue Analysis.
AD-A092 423/3 1456

Cost Impact Assessment of Cost Accounting Practice Changes.
AD-A092 434/0 1296

NAVAL RESEARCH LAB., WASHINGTON, DC.

NRL-MR-4369
NRL Inertial Confinement Fusion Theory Program 1979 Annual Report, October 1978 - December 1979.
AD-A092 470/4 1414

NRL-MR-4371
Detailed Modelling of Combustion Systems.
AD-A092 234/4 1452

NRL-MR-4372
Results of the Solar Cell Experiments aboard the NTS-2 Satellite after 811 Days in Orbit.
AD-A092 438/1 1363

NRL-MR-4374
Performance of ANDVT HF Modem with Peak Clipping.
AD-A092 114/8 1408

NRL-MR-4387
NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414

NRL-MR-4397
Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414

NRL-MR-4404
A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373

NRL-MR-4406
Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
AD-A092 473/8 1370

NRL-REPRINT-1645
Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335

NRL-REPRINT-3862
Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327

NRL-REPRINT-8078
Reprint: Analysis of Gas Dissociation Solar Thermal Power System.
AD-A091 982/9 1363

NRL-8261
A New Theory for Striations with Experimental Verifications.
AD-A092 058/7 1447

NRL-8372
Effective Shear Modulus for Flexural and Extensional Waves in an Unloaded Thick Plate.
AD-A092 149/4 1449

NRL-8418
Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351

NRL-8422
Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293

NRL-8430
Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411

Forecast of Remote Underwater Sensing Technology.
(USCG-D-38-80)
AD-A092 390/4 1407

Doppler Velocimeter for Laser Accelerated Targets.
NRL-MR-4319 1417

Laser Fusion Studies at NRL.
NRL-MR-4350 1417

Interferometric Measurement of Small Refraction Angles.
NRL-MR-4353 1448

Preheat Studies on Laser Ablatively-Accelerated Foils.
NRL-MR-4356 1417

NAVAL RESEARCH LAB., WASHINGTON, DC. SHOCK AND VIBRATION INFORMATION CENTER.

The Shock and Vibration Digest. Volume 12, Number 11.
AD-A092 384/7 1449

NAVAL SEA SYSTEMS COMMAND, WASHINGTON, DC.

SES Multi-Purpose Ship Study. Transport Application. Volume 1. Technical Summary.
AD-A091 948/0 1392

NAVAL SUBMARINE MEDICAL RESEARCH LAB., GROTON, CT.

NSMRL-888
The Effects of Earplugs and Earmuffs on Pitch Discrimination in Noise.
AD-B039 142/5 1326

NAVAL SURFACE WEAPONS CENTER WHITE OAK LAB., SILVER SPRING, MD.

NSWC/WOL/TR-76-43
A Characterization Study of Several Heat Resistant Explosives in Mild Detonating Cords.
AD-B015 229/8 1433

NAVAL TRAINING EQUIPMENT CENTER, ORLANDO, FL.

NAVTRAEQUIPC-IH-322
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287

NAVAL UNDERSEA CENTER, SAN DIEGO, CA.

NUC-TP-303
Handbook of Underwater Imaging System Design.
AD-904 472/8 1409

NAVAL WEAPONS CENTER, CHINA LAKE, CA.

NWC-TP-5174
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
(GIDEP-347.60.00.00-X7-43)
AD-892 684/2 1433

NWC-TP-6005
Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
(GIDEP-E119-1143)
AD-B026 467/1 1403

NWC-TP-6010
Application of Statistical Fracture Criteria to the Problem of Predicting Infrared Dome Thermal Shock Failures.
(GIDEP-E111-1461)
AD-B028 668/2 1411

NWC-TP-6054
Laser Safety Computer Program.
(GIDEP-E140-1053)
AD-B032 525/8 1439

NWC-TP-6195
Coso Monitoring Program.
(AD-E900-018)
AD-A092 417/5 1343

NWC-TP-6202
Effect of Response Mode on Target Identification.
(AD-E900-000)
AD-A092 381/3 1412

NAVY EXPERIMENTAL DIVING UNIT, PANAMA CITY, FL.

NEDU-14-80
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323

NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER, SAN DIEGO, CA.

NPRDC-SR-80-33
Computer-Managed Instruction in the Navy. I. Research Background and Status.
AD-A092 481/1 1305

NAVY UNDERWATER SOUND LAB., NEW LONDON, CT.

USL-TM-2070-412-69
Congrats Temperature and Salinity to Sound Speed Conversion.
AD-B022 435/2 1436

NETHERLANDS INST. FOR PREVENTIVE MEDICINE TNO, LEIDEN.

Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator)--Translation.
PB81-125650 1309

NEVADA UNIV., LAS VEGAS.

Evaluation of HEW - Assisted Programs to the Hispanic Population of Clark County, Nevada.
(HEW/REG-9-77-04)
PB81-125726 1309

NEVADA UNIV. SYSTEM, RENO. WATER RESOURCES CENTER.

PUB-41065
Basin Development and Water Allocation,
(W81-00514, OWRT-B-038-NEV(4))
PB81-127276 1343

NEW ENGLAND RESEARCH APPLICATION CENTER, STORRS, CT.

NERACEDBNT0336
Magnetic Separation of Materials. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855249 1391

NERACEDBNT0433
Engineering Information Systems. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855348 1299

NERACEDBNT0562
Nylon Products. June, 1976-May, 1980 (Citations from the Energy Data Base).

PB81-855405 1374

NERACEDBNT1232
Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
PB81-851818 1398

NERACEDBNT1388
Regional Seismicity. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850935 1350

NERACEDBNT1409
Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850950 1448

NERACEDBNT1425
Accelerometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851503 1397

NERACEDBNT1584
Centrifuges. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851123 1397

NERACEDBNT1622
Cyclotrons. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851057 1441

NERACEDBNT1628
Densitometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851255 1397

NERACEDBNT1669
Extractive Metallurgy. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851321 1372

NERACEDBNT1690
Systems Analysis Applied to Energy Forecasting. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-850984 1363

NERACEDBNT1706
Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851008 1388

NERACEDBNT1831
Hydrocracking. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851610 1339

NERACEDBNT1837
Resource Conservation and Recovery Act (RCRA). January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851024 1363

NERACEDBNT1840
Heat Exchangers for Space Heating. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851032 1380

NERACEDBNT1848
Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851362 1348

NERACEDBNT2044
Cost Benefit Analysis Methods. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851651 1297

NERACEI NT0233
Computer Simulation of Aircraft. July, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855058 1290

NERACEI NT0237
Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294

NERACEI NT0241
Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855082 1393

NERACEI NT0244
Varistors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855090 1353

NERACEI NT0270
Plastics Extrusion. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855124 1390

NERACEI NT0295
Thermocouple Applications. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855157 1398

NERACEI NT0296
Computer Controlled Forging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855165 1391

NERACEI NT0333
Sliding Contact Lubricants. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855223 1373

NERACEI NT0336
Magnetic Separation of Materials. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855231 1391

NERACEI NT0371
Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855272 1374

NERACEI NT0390
Encapsulation of Electronic Circuits. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855298 1391

NERACEI NT0395
Ion Exchange Resins. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855306 1339

NERACEI NT0421
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322

NERACEI NT0427
Polyethylene Adhesives. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855322 1367

NERACEI NT0431
Hot Stamping. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855330 1391

NERACEI NT0435
Mobile Telephone and Paging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855355 1410

NERACEI NT0436
Ultrasonic Transducers. July, 1974-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855363 1353

NERACEI NT0473
Packaging Machines. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855371 1391

NERACEI NT0485
Anodizing Aluminum. January, 1969-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855389 1391

NERACEI NT0564
Synthetic Fibers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855397 1369

NERACEI NT0581
Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855413 1390

NERACEI NT0680
Solenoid Valves. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855462 1394

NERACEI NT0859
Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855553 1391

NERACEI NT1232
Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-851826 1398

NERACEI NT1233
Nondestructive Testing of Joints. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850919 1397

NERACEI NT1425
Accelerometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851511 1398

NERACEI NT1584
Centrifuges. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851131 1397

NERACEI NT1622
Cyclotrons. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851065 1441

NERACEI NT1627
Demodulators. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851297 1361

NERACEI NT1628
Densitometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851263 1397

NERACEI NT1669
Extractive Metallurgy. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851339 1372

NERACEI NT1670
Extraterrestrial Atmospheres. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851198 1292

NERACEI NT1706
Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851016 1388

NERACEI NT1709
Foundation Piles for Land Construction. December, 1976-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850240 1395

NERACEI NT1710
Foundation Piles for Marine Platforms. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850232 1393

NERACEI NT1766
Sailplanes. January, 1970-July, 1980 (Citations from the Engineering Index Data Base).
PB81-850604 1290

NERACEI NT1831
Hydrocracking. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851628 1339

NERACEI NT1917
Kalman Filters. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851107 1397

NERACEI NT1930
Profilometers. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851719 1398

NERACEI NT1931
Professional Continuing Education. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851701 1307

NERACEI NT1939
Vacuum Diffusion Welding. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851685 1390

NERACEI NT2044
Cost Benefit Analysis Methods. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851669 1297

NERACIAANT0237
Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855066 1294

NERACIAANT0244
Varistors. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855108 1353

NERACIAANT0275
Stepper Motors. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855132 1358

NERACIAANT0295
Thermocouple Applications. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855140 1398

NERACIAANT0304
Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391

NERACIAANT0333
Sliding Contact Lubricants. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855215 1373

NERACIAANT0357
Fire Detection and Extinguishment. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855256 1394

NERACIAANT0593
Cathode Ray Tubes. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855421 1353

NERACIAANT0654
Isostatic Pressing. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855439 1391

NERACIAANT0655
Laminar Flow of Fluids in Pipes. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855447 1439

NERACIAANT0669
Sheet Metal Forming. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855454 1391

NERACIAANT0771
Biotelemetry. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).

PB81-855496 1316

NERACIAANT1232
Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851834 1398

NERACIAANT1233
Nondestructive Testing of Joints. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850927 1397

NERACIAANT1256
Nondestructive Testing of Fractures. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851792 1398

NERACIAANT1409
Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850968 1448

NERACIAANT1425
Accelerometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851529 1398

NERACIAANT1584
Centrifuges. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851149 1397

NERACIAANT1622
Cyclotrons. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851073 1441

NERACIAANT1627
Demodulators. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851305 1361

NERACIAANT1628
Densitometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851271 1397

NERACIAANT1766
Sailplanes. January, 1972-March, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850596 1290

NERACIAANT1865
Ocean Wave Spectra. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851354 1342

NERACIAANT1917
Kalman Filters. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851099 1397

NERACIAANT2044
Cost Benefit Analysis Methods. January, 1972-August, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851677 1297

NERACUSGNT0712
Jet Stream. June, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-855470 1296

NERACUSGNT1232
Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851800 1398

NERACUSGNT1256
Nondestructive Testing of Fractures. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851784 1398

NERACUSGNT1409
Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
PB81-850943 1448

NERACUSGNT1425
Accelerometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851495 1397

NERACUSGNT1584
Centrifuges. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851115 1397

NERACUSGNT1622
Cyclotrons. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851040 1441

NERACUSGNT1627
Demodulators. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851289 1361

NERACUSGNT1628
Densitometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851248 1397

NERACUSGNT1669
Extractive Metallurgy. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851313 1372

NERACUSGNT1706
Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388

NERACUSGNT1715
Spent Nuclear Fuel Recovery. May, 1972-February, 1980 (Citations from the NTIS Data Base).
PB81-850687 1430

NERACUSGNT1766
Sailplanes. January, 1970-March, 1980 (Citations from the NTIS Data Base).
PB81-850612 1290

NERACUSGNT1831
Hydrocracking. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851602 1339

NERACUSGNT1917
Kalman Filters. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851081 1397

NERACUSGNT1929
Profit Performance. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851727 1301

NERACUSGNT1938
Long-range Forecasting Methods. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851693 1297

NERACUSGNT2034
Incentive Contracts. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851636 1297

NERACUSGNT2040
Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851909 1297

NERACUSGNT2121
Educational Level Projections. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851891 1307

NEW MEXICO INST. OF MINING AND TECHNOLOGY, SOCORRO. TERA GROUP.

NMT/TERA-T-80-1356-U-VOL-1
HIBAL Program Preliminary Warhead-Design. Volume I.
AD-A092 071/0 1432

NMT/TERA-T-80-1356-U-VOL-2
HIBAL Program. Preliminary Warhead-Design. Volume II. Appendices.
AD-A092 072/8 1432

NEW YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION, ALBANY.

National Dam Safety Program. Nanticoke Creek Watershed Project Site 10 Dam (Inventory I.D. Number NY 713, DEC 85D-3946, Susquehanna River Basin, Broome County, New York, Phase I Inspection Report,
AD-A092 036/3 1380

National Dam Safety Program, Browns Reservoir Dam (Inventory Number ID NY-763, DEC Number 232 BE-4361), Long Island Basin, Westchester County, New York. Phase I Inspection Report,
AD-A092 037/1 1380

National Dam Safety Program. Mt. Beacon Reservoir (Inventory Number NY-26), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 038/9 1381

National Dam Safety Program. Morgan Lake Dam (Inventory Number NY-787), Hudson River Basin, Dutchess County, New York. Phase I Inspection Reprot,
AD-A092 039/7 1381

National Dam Safety Program. Harlem Valley Reservoir (Inventory Number N.Y. 273), Housatonic River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 040/5 1381

National Dam Safety Program. Garnerville Dam (Inventory Number N.Y. 744), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 042/1 1381

National Dam Safety Program. Wappingers Falls Dam (I.D. Number N.Y. 3, D.E.C. 613A), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 170/0 1381

National Dam Safety Program. Tivoli Lake Dam (Inventory Number N.Y. 52), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 219/5 1381

National Dam Safety Program. Lake Suzanne (Inventory Number N.Y. 760) Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 220/3 1382

National Dam Safety Program. Beaver Dam Lake (Inventory Number N.Y. 619), Hudson River Basin, Orange County, New York. Phase I Inspection Report,
AD-A092 225/2 1382

National Dam Safety Program. Harrower Pond Dam (Inventory Number NY207), Mohawk River Basin, Montgomery County, New York. Phase I Inspection Report,
AD-A092 227/8 1382

National Dam Safety Program. Patterson, Brixius, Grey Creek Watershed Project, Site 1 (Inventory Number NY698), Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 296/3 1382

National Dam Safety Program. Patterson Brixius Grey Creek Watershed Project, Site 2 (Inventory Number NY 725). Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 452/2 1382

NEW YORK STATE LIBRARY, ALBANY.

A Guide to Dutch Manuscripts Relating to New Netherland in United States Repositories,
ED-183 170 1298

NEW YORK UNIV., NY. CENTER FOR SCIENCE AND TECHNOLOGY POLICY.

Flow of Technology from the OECD to the U.S.S.R: A Feasibility Study,
(FAR-30000)
AD-A092 442/3 1297

NEW YORK UNIV., NY. COURANT INST. OF MATHEMATICAL SCIENCES.

Propagation, Scattering, and Reflection of Waves in Continuous and Random Inhomogeneous Media, and Nonlinear Boundary Value Problems.
AD-A092 062/9 1436

NORTH CAROLINA STATE UNIV. AT RALEIGH. ENGINEERING RESEARCH SERVICES DIV.

Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
(ARO-12487.6-MS)
AD-A092 496/9 1367

NORTH CAROLINA UNIV. AT CHAPEL HILL.

The Gulf Stream Meanders Experiment. Hydrographic Data Report. R/V Endeavor Cruises, EN-040 (2-8 August 1979) EN-045 (16-23 November 1979),
AD-A092 144/5 1349

NORTH CAROLINA UNIV. AT CHAPEL HILL. DEPT. OF GEOLOGY.

Peat Resources of North Carolina. Quarterly Progress Report.
DOE/ET/10159-T1 1342

NORTH CAROLINA UNIV. AT CHAPEL HILL. INST. OF STATISTICS.

MIMEO SER-1307
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
AD-A092 163/5 1375

NORTH CAROLINA WATER RESOURCES RESEARCH INST., RALEIGH.

UNC-WRRI-80-00
Water Resources in North Carolina.
(WB1-00325, OWRT-A-999-NC(53))
PB81-127318 1343

NORTHEAST-MIDWEST INST., WASHINGTON, DC.

Moving from Reaction to Anticipation in U.S. Import Policies.
(EDA/ERD-80-168)
PB81-125544 1300

Water Resource Priorities for the Midwest.
(EDA-ERD-80-169)
PB81-129801 1386

NORTHEASTERN FOREST EXPERIMENT STATION, BROOMALL, PA.

FSRP-NE-315
Flowering and Seed Production in Seven Hardwood Species.
PB81-141996 1292

FSRP-NE-326
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292

FSRP-NE-328
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375

FSRP-NE-338
SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374

FSRP-NE-347
Carbohydrate Levels in Current-year Shoots of Sugar Maple.
PB81-134199 1291

FSRP-NE-348
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291

FSRF-WE-400
Skyline Harvesting in Appalachia.
PB81-134173 1291

NEFES/81-134
Flowering and Seed Production in Seven Hardwood Species.
PB81-141996 1292

NEFES/81-144
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292

NEFES/81-146
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375

NEFES/81-152
SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374

NEFES/81-160
Carbohydrate Levels in Current-year Shoots of Sugar Maple.
PB81-134199 1291

NEFES/81-161
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291

NEFES/81-162
Skyline Harvesting in Appalachia.
PB81-134173 1291

NORTHEASTERN UNIV., BOSTON, MA.

Signal Processing Circuit Development.
(RADC-TR-80-260)
AD-A092 371/4 1411

NORTHERN VIRGINIA TRAINING CENTER FOR THE MENTALLY RETARDED, FAIRFAX.

A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
ED-183 169 1298

NORTHROP SERVICES, INC., HUNTSVILLE, AL.

Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
DOE/CS/20160-01(V.5) 1362

NORTHROP SERVICES, INC., LAS VEGAS, NV.

Williams Air Force Base Air Quality Monitoring Study.
(EPA/600/4-80-037, AFESC/ESL-TR-79-33)
AD-A092 165/0 1381

NORTHWESTERN UNIV., EVANSTON, IL. DEPT. OF MECHANICAL ENGINEERING.

Optimal Control of Systems with Uncertainty.
(AFOSR-TR-80-1183)
AD-A092 389/6 1377

NOTRE DAME UNIV., IN.

Reprint: Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body.
(ARO-15336.2-E)
AD-A092 494/4 1438

NOTRE DAME UNIV., IN. DEPT. OF METALLURGICAL ENGINEERING AND MATERIALS SCIENCE.

Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.
DOE/ET/10460-14 1370

NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC. OFFICE OF NUCLEAR REACTOR REGULATION.

BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking: Resolution of Generic Technical Activity A-10.
NUREG-0619-REV-1 1428

O'BRIEN AND GERE ENGINEERS, INC., PHILADELPHIA, PA.

National Dam Safety Program. Lookover Lake Dam (NJ00565), Hudson River Basin, Longhouse Brook, Passaic, County, New Jersey. Phase I Inspection Report.
AD-A092 218/7 1381

OAK RIDGE GASEOUS DIFFUSION PLANT, TN.

K/UR-140
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346

Extrapolation to the U-F System from the Mo-F System.
K/ET-594 1337

OAK RIDGE NATIONAL LAB., TN.

CONF-800874-1(Dr)
Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.
ORNL/TM-7124(Dr) 1417

ENDF-303
GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
ORNL/TM-7341 1446

ORNL/EIS-85
Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
(EPA-600/1-78-050)
PB81-130536 1322

ORNL/EIS-130
Review of the Environmental Effects of Pollutants: X. Toxaphene.
(EPA-600/1-79-044)
PB81-132409 1323

ORNL/NUREG/TM-396
A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System.
NUREG/CR-1761 1422

Energy in the '80S: Decade of Decision.
CONF-800212- 1362

Implications of Tritium in Neutral Beam Injectors.
CONF-800427-19(Dr) 1414

Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(Dr) 1423

Observation of Dislocations and Twins in Explosively Compacted Alumina.
CONF-800641-7 1367

ETF Interim Design Review.
CONF-800770-1 1414

Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(Dr) 1420

Helium-Jet Coupled Mass Separator: Advances and Directions.
CONF-800870-1 1420

Analysis of the New GCFR Upper and Lower Plenum Flow-Through Shields.
CONF-800942-4 1422

Developments in Sensitivity Theory.
CONF-800942-10 1430

Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427

ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415

ETF System Code: Composition and Applications.
CONF-801011-5 1415

Configurational Analysis of an EBT Reactor in Various Magnetic Geometries.
CONF-801011-10 1414

Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
CONF-801011-14 1415

ETF Design Activities: Status and Future Direction.
CONF-801011-15 1415

ETF Reactor Design Status.
CONF-801037-21 1415

Index to the AEC/ERDA/DOE Air Cleaning Conferences.
CONF-801038-3 1426

Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
CONF-801038-4 1423

Materials for Conoco Zinc Chloride Hydrocracking Process.
CONF-801079-2 1453

State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393

State-of-the-Art Assessments on Critical Coal Conversion Equipment.
CONF-801090-3 1330

Teaching the Originator to Make Whoopie.
CONF-801113-3 1298

Interactive Code for Examining Hypothetical Distributions of Experimental Data.
CONF-8010106-2 1357

Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.
CONF-8010108-2 1319

Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
CONF-8010108-3 1315

External Dosimetry.
DOE/TIC-11273 1327

Magnetic Fusion Experiments at Oak Ridge National Laboratory (ORNL).
DOE/TIC-11281 1416

Engineering Test Facility (ETF) At Oak Ridge National Laboratory (ORNL).
DOE/TIC-11282 1416

Oak Ridge National Lab., Tennessee.
DOE/TIC-11285 1337

Application of the Shell Model to Nuclear Spectroscopy.
DOE/TIC-11287 1444

SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
ORNL/CSD-53 1428

Composition of Solidified Binary Alloy from a Simple Solidification Model.
ORNL/CSD-66 1371

Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
ORNL/EIS-156/V1 1424

R And D Needs Assessment for the Engineering Test Facility.
ORNL/TM-7122 1417

ISX-B Neutral Beams and the Beam Target Experiment.
ORNL/TM-7452 1418

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362

Currents Induced in Tokamaks by Electron Cyclotron Heating.
ORNL/TM-7503 1418

Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426

FEMWATER: A Finite-Element Model of Water Flow Through Saturated-Unsaturated Porous Media.
ORNL-5567 1343

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362

Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430

OFFICE OF NAVAL RESEARCH LONDON, (ENGLAND).

ESN-33-5
European Scientific Notes. Volume 33, Number 5.
AD-A092 024/9 1297

OFFICE OF SCIENCE AND TECHNOLOGY POLICY, WASHINGTON, DC.

Federally-Supported Human Nutrition Research, Training, and Education: Update for the 1980s. I. Human Nutrition Research and Training.
PB81-128944 1321

OFFICE OF THE OCEANOGRAPHER OF THE NAVY, ALEXANDRIA, VA.

University Curricula in the Marine Sciences and Related Fields. Academic Years 1969-70 and 1970-71.
AD-A092 026/4 1304

OHIO STATE UNIV., COLUMBUS.

Pulse Radiolysis of Fast Reactions in Molecular Systems. Progress Report, November 1979-September 1980.
DOE/ER/01763-T1 1336

The Impact of Mobile Coronary Care Units: Executive Summary.
(NCHSR-81-17)
PB81-133373 1321

The Impact of Mobile Coronary Care Units: Final Report.
(NCHSR-81-16)
PB81-133381 1321

OHIO STATE UNIV., COLUMBUS. COMPUTER AND INFORMATION SCIENCE RESEARCH CENTER.

OSU-CISRC-TR-80-8
Design and Analysis of Relational Join Operations of a Database Computer (DBC).
AD-A092 230/2 1355

OHIO STATE UNIV., COLUMBUS. ELECTROSCIENCE LAB.

ESL-711679-2
Airborne Antenna Pattern Code User's Manual.
(RADC-TR-80-302)
AD-A092 316/9 1359

OHIO STATE UNIV., COLUMBUS. ENGINEERING EXPERIMENT STATION.

EES-304
Applied Research in Analytical Photogrammetry.
(FHWA/OH-80/005)
PB81-127300 1341

OHIO STATE UNIV. RESEARCH FOUNDATION, COLUMBUS.

Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
(AFOSR-TR-80-1174)
AD-A092 249/2 1328

OHIO UNIV., ATHENS.

Study of Structure of Nuclei with Neutrons and Nuclear Data Measurements for MFE. Progress Report, September 1, 1979-August 31, 1980.
DOE/ER/02490-1 1443

OKLAHOMA STATE UNIV., STILLWATER. DEPT. OF AGRICULTURAL ENGINEERING.

Investigation of Factors Affecting Energy for Irrigation Pumping.
(WB1-00509, OWRT-A-081-OKLA(1))
PB81-127557 1291

OKLAHOMA STATE UNIV., STILLWATER. DEPT. OF CHEMISTRY.

Polynuclear Aromatic Compounds. Synthesis and Purification.

(EPA-600/2-80-204)
PB81-125015 1332

OKLAHOMA STATE UNIV., STILLWATER. ELECTRONICS LAB.

Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
(AFGL-TR-80-0071)
AD-A092 111/4 1359

OKLAHOMA STATE UNIV., STILLWATER. FLUID POWER RESEARCH CENTER.

Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
(NAEC-92-132)
AD-A092 289/8 1373

OKLAHOMA UNIV., NORMAN. DEPT. OF CHEMISTRY.

TR-25
Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333

OKLAHOMA UNIV., NORMAN. SCHOOL OF AEROSPACE, MECHANICAL AND NUCLEAR ENGINEERING.

OU-AMNE-80-17
Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368

OU-AMNE-80-20
Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368

TR-18
Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368

TR-19
Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368

OKLAHOMA WATER RESOURCES RESEARCH INST., STILLWATER.

Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
(W81-00390, OWRT-A-092-OKLA(1))
PB81-124158 1384

OREGON STATE UNIV., CORVALLIS. AIR RESOURCES CENTER.

Analysis of Baseline Data from Federally Leased Oil Shale Tracts in Colorado and Utah.
DOE/EV/70031-5 1383

ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK, DELFT (NETHERLANDS).

F-1535
Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope),
PB81-125171 1338

G-606
Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
PB81-125189 1338

ORINCON CORP., LA JOLLA, CA.

OC-R-80-0002AB-1
Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
(AFOSR-TR-80-1157)
AD-A092 199/9 1376

OWENS-ILLINOIS, INC., TOLEDO, OH. CORPORATE TECHNOLOGY DIV.

AR Film on Phase-Separated Glass. Final Report, January 1979-April 1980.
UCRL-15285 1440

PACIFIC MISSILE TEST CENTER, POINT MUGU, CA.

PMTC-TP-76-7
Analysis of the Power Spectral Density of Tape Recorder Flutter.
AD-B010 481/0 1399

PADUCAH GASEOUS DIFFUSION PLANT, KY.

License Application for Type 48HX Cylinder for Shipment of Natural Assay UF sub 6.
KY-697 1422

PARIS-11 UNIV., ORSAY (FRANCE). INST. DE PHYSIQUE NUCLEAIRE.

Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337

Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444

PEAT, MARWICK, MITCHELL AND CO., SAN FRANCISCO, CA.

Task Force Delay Study. William B. Hartsfield Atlanta International Airport. Volume II.
AD-A092 455/5 1290

Task Force Delay Study. Denver Stapleton International Airport, Volume II.
AD-A092 456/3 1291

PEAT, MARWICK, MITCHELL AND CO., WASHINGTON, DC.

Study of Loan Management Operations.
(HUD-0001529)
PB81-139248 1301

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK.

Interactive Mine-Power-System Analysis--APL Fault Program.
(BUMINES-OFR-131-80)
PB81-130858 1348

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK. DEPT. OF MATERIALS SCIENCE AND ENGINEERING.

TR-14
Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370

TR-15
Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK. DEPT. OF METEOROLOGY.

Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362

PENNSYLVANIA UNIV., PHILADELPHIA.

Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.
(NSF/PRA-7510163/1)
PB81-125387 1300

The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
PB81-126732 1307

PENNSYLVANIA UNIV., PHILADELPHIA. DEPT. OF MATERIALS SCIENCE AND ENGINEERING.

TR-2
Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369

PENNSYLVANIA UNIV., PHILADELPHIA. DEPT. OF SOCIOLOGY.

Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
(NCHSR-81-5)
PB81-133365 1307

PERKIN-ELMER CORP., NORWALK, CT.

PE-11934
Thin Film Optical Waveguide Technology.
(AFAL-TR-74-60)
AD-919 567/8 1352

PHILCO-FORD CORP PALO ALTO CALIF SPACE AND RE-ENTRY SYSTEMS DIV

Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
(AFFDL-TR-69-122)
AD-871 914/8 1379

PHILIPS LABS., BRIARCLIFF MANOR, NY.

PL-26-CR72-0809
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
(AFFDL-TR-71-147-Pt-2)
AD-902 944/8 1379

PL-40-CR71-1230
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part I. Thermodynamic Design and Study of Life-Limiting Components.
(AFFDL-TR-71-147-Pt-1)
AD-891 461/6 1457

PHYSICAL DYNAMICS INC DETROIT MICH

PD-72-025
Submarine Communication at ULF Frequencies. I. A Program of Investigation.
(RADC-TR-72-338)
AD-910 973/7 1409

PITTSBURG AND MIDWAY COAL MINING CO., ENGLEWOOD, CO.

Solvent Refined Coal (SRC) Process.
DOE/ET/10104-T4(V.1) 1330

PITTSBURGH UNIV., PA. DEPT. OF MATHEMATICS AND STATISTICS.

TR-80-9
Assessing Risks through the Determination of Rare Event Probabilities.
(AFOSR-TR-80-1165)
AD-A092 192/4 1376

TR-80-11
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
(AFOSR-TR-80-1164)
AD-A092 191/6 1376

PITTSBURGH UNIV., PA. INST. FOR STATISTICS AND APPLICATIONS.

Distributions of Some Matrix Variates and Latent Roots in Multivariate Behrens-Fisher Discriminant Analysis.
(AFOSR-TR-80-1166)
AD-A091 960/5 1375

PLANOLOGISCH STUDIECENTRUM TNO, DELFT (NETHERLANDS).

Bereikbaarheid als Vestigingsplaatsfaktor voor Bedrijven (Attainability as a Location Factor for Industry),
PB81-125635 1300

PONTIFICIA UNIV. CATOLICA DO RIO DE JANEIRO (BRAZIL). INST. DE FISICA.

Conformal Invariance in the Quantum Field Theory.
INIS-mf-5640 1444

Nonlinear Processes of Magnons in Insulating Ferromagnetic Materials.
INIS-mf-5641 1451

Three-Critical Phenomena in the He exp 3 -He exp 4 Mixture.
INIS-mf-5642 1452

Relaxation Rates of Electronic and Nuclear Magnons in Antiferromagnetic Materials.
INIS-mf-5643 1451

Color Centers in KCN: a Structural Analysis of Crystalline Domains.
INIS-mf-5644 1437

Calculation of the Electronic Structure and Contact Hyperfine Parameters of Interstitial Hydrogen in Alkaline - Earth Fluorides.
INIS-mf-5646 1451

Calculation of the Hyperfine Constants of the V /sub K/ Center in CaF sub 2 , SrF sub 2 and BaF sub 2.
INIS-mf-5647 1451

Determination of Fano's Factor in Semiconductors.
INIS-mf-5648 1451

Gauge Field Copies.
PUC-tn-01/79 1446

Scattering Theory and 1/N Expansion in the Chiral Gross-Neveu Model.
PUC-tn-08/79 1446

Gravitational Torque in General Relativity.
PUC-tn-11/79 1449

Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-tn-17/79 1451

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORP., TOKYO (JAPAN).

Semi-Annual Progress Report of Power Reactor and Nuclear Fuel Development Corporation, Tokai Works. July-December 1977.
PNCT-831-78-02 1430

Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430

POWER TECHNOLOGIES, INC., SCHENECTADY, NY.

NASA-CR-165156
MOD-2 Wind Turbine Farm Stability Study.
DOE/NASA/0134-1 1365

PRATT AND WHITNEY AIRCRAFT GROUP, WEST PALM BEACH, FL. GOVERNMENT PRODUCTS DIV.

PWA-FR-11897
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
(AMMRC-TR-80-39)
AD-A092 245/0 1368

PRC INFORMATION SCIENCES CO., MCLEAN, VA.

PRC-R-1577-Vol-1
Expanded Phase I ACS Experiments. Volume I. Experimental System Testing and Evaluation.
(RADC-TR-72-19-Vol-1)
AD-893 139/6 1340

PRC-R-1577-Vol-2
Expanded Phase I ACS Experiments. Volume II. Design Requirements for a Prototype Cartographic Finishing Subsystem.
(RADC-TR-72-19-Vol-2)
AD-893 140/4 1340

PRINCETON UNIV., NJ. DEPT. OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE.

TR-64
Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449

TR-65-ONR
Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450

Reprint: An Approach to Programmable CTD Filters Using Coefficients 0, + 1, and -1.
(AFOSR-TR-80-1131)
AD-A091 877/1 1358

Reprint: Threshold Effect on Error Probability in QAM Systems.
(ARO-16011.5-EL)
AD-A092 122/1 1408

Reprint: Memoryless Quantizer-Detectors for Constant Signals in m-Dependent Noise.
(ARO-16011.8-EL)
AD-A092 123/9 1358

Reprint: Optimal Design of FIR Digital Filters with Monotone Passband Response.
(ARO-16011.10-EL)
AD-A092 124/7 1359

Reprint: A Note on Variable Recursive Digital Filters.
(ARO-16011.12-EL)
AD-A092 131/2 1359

PRINCETON UNIV., NJ. PLASMA PHYSICS LAB.

Neutronics Calculations for the TFTR Neutron Calorimeter.
PPPL-1695 1418

Mode Converter for Electron Cyclotron Resonance Heating of Toroidal Plasmas.
PPPL-1697 1418

Disruptive Shift of Magnetic Axis in Non-Circular Tokamaks.
PPPL-1707 1418

Anomalous Transport Due to Shear-Alfven Waves.
PPPL-1709 1418

Impurity Ions in a Rotating Tokamak.
PPPL-1710 1434

Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418

Ion Cyclotron Heating of Plasmas with Two-Ion Components.
PPPL-1713 1418

Second Region of Stability.
PPPL-1715 1448

Analytical Study of the External Field for Non-Circular Tokamak with Multipole Moment Expansion Approach.
PPPL-1718 1418

Material Selection for TFTR Limiters.
PPPL-1719 1418

PROPELLANTS, EXPLOSIVES AND ROCKET MOTOR ESTABLISHMENT, WALTHAM ABBEY (ENGLAND).

The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
(DRIC-BR-71433)
AD-A091 887/0 1373

The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
(DRIC-BR-71961)
AD-A092 105/6 1373

PROPELLANTS, EXPLOSIVES AND ROCKET MOTOR ESTABLISHMENT, WESTCOTT (ENGLAND).

PERME-MEMO-96
Production of Nitrous Oxide in a Rocket Motor Exhaust.
(DRIC-BR-75265)
AD-A091 893/8 1380

PURDUE UNIV., LAFAYETTE, IN.

Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency,
(HUD-0001415)
PB81-139032 1301

PURDUE UNIV., LAFAYETTE, IN. COMBUSTION LAB.

PURDU-CL-80-03
AGT-1500 Combustor and Fuel Effects Modeling.
(ARO-15642.5-E)
AD-A092 255/9 1455

PURDUE UNIV., LAFAYETTE, IN. SCHOOL OF CIVIL ENGINEERING.

CE-STR-80-9
Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons,
(NSF/RA-800207)
PB81-120032 1350

CE-STR-80-12
Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
(NSF/RA-800208)
PB81-120065 1350

PURDUE UNIV., LAFAYETTE, IN. SCHOOL OF ELECTRICAL ENGINEERING.

PASM: A Reconfigurable Multimicrocomputer System for Image Processing.
(AFOSR-TR-80-1087)
AD-A092 182/5 1355

Reprint: Syntactic Models in Pattern Recognition and Applications.
AD-A092 468/8 1356

PURDUE UNIV., LAFAYETTE, IN. WATER RESOURCES RESEARCH CENTER.

TR-136
Green River Basin Flow Forecasting Models.
(W81-00329, OWRT-B-094-IND(4))
PB81-124448 1343

Indiana Five-Year Water Resources Research and Development Plan. Fiscal Years 1982-1986.
(W81-00279)
PB81-121253 1383

RADIAN CORP., AUSTIN, TX.

Radian Remote Sampling System. Digital Processor System.

COO-4596-T1 1357

Geothermal Materials Survey : Arkansas Power and Light Development and Demonstration Project. 100KW Power System Using Direct Contact Heat Exchangers, El Dorado, Arkansas.
DOE/ET/27026-T4 1330

RADIATION INC MELBOURNE FLA

6752
Redundant Area Coding Study.
(RADC-TR-71-192)
AD-888 625/1 1358

A-04773-Vol-1-Pt-1
Lightweight radar alarm system. Vol. 1.
(RADC-TR-65-58-Vol-1-Pt-1)
AD-482 920/6 1413

A-04773-Vol-2
Lightweight radar alarm system. Vol. 2.
(RADC-TR-65-58-Vol-2)
AD-482 913/1 1413

RAND CORP., SANTA MONICA, CA.

RAND/N-1276-HUD
Analyzing Allowance Program Administrative Costs: Account Structures and Methodology,
(HUD-0001632)
PB81-139412 1314

RAND/N-1354-HUD
Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001449)
PB81-139149 1312

RAND/N-1355-HUD
Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
(HUD-0001606)
PB81-139396 1314

RAND/N-1358-HUD
Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001438)
PB81-139081 1311

RAND/N-1361-HUD
Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001451)
PB81-139164 1312

RAND/N-1364-HUD
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 3. Housing Assistance Supply Experiment,
(HUD-0001427)
PB81-139065 1311

RAND/N-1365-HUD
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001452)
PB81-139172 1312

RAND/N-1366-HUD
Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
(HUD-0001635)
PB81-139420 1314

RAND/N-1370-HUD
Codebook for the Attitude Module of the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001454)
PB81-139198 1313

RAND/N-1372-HUD
Codebook for the Attitude Module of the Household Survey, Site II, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001685)
PB81-139461 1315

RAND/N-1376-HUD
Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001455)
PB81-139206 1313

RAND/N-1378-HUD
Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
(HUD-0001533)
PB81-139255 1313

RAND/N-1379-HUD
Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
(HUD-0001637)
PB81-139438 1314

RAND/N-1383-HUD
Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment,
(HUD-0001428)
PB81-139073 1311

RAND/N-1384-HUD
Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001453)
PB81-139180 1312

RAND/N-1386-HUD
Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
(HUD-0001534)
PB81-139263 1313

RAND/N-1391-HUD
Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
(HUD-0001450)
PB81-139156 1312

RAND/N-1393-HUD
Supplemental Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
(HUD-0001630)
PB81-139404 1314

RAND/N-1405-HUD
Codebook for the Survey of Residential Buildings, Site I, Wave 3. Housing Assistance Supply Experiment,
(HUD-0001441)
PB81-139099 1311

RAND/N-1482-AF-PT-1
Models and Techniques for Recoverable Item Stockage when Demand and the Repair Process are Nonstationary. Part I. Performance Measurement.
AD-A091 935/7 1401

RAND/N-1584-RC
The Security of Pakistan: A Trip Report.
AD-A092 156/9 1302

RANGE COMMANDERS COUNCIL, WHITE SANDS MISSILE RANGE, NM. OPTICAL SYSTEMS GROUP.

RCC/OSG-102-80
The Toxicity of Photographic Chemicals.
AD-A091 914/2 1328

RAYTHEON CO/AUTOMETRIC WAYLAND MASS

FR-71-3428
Photo-Carto Interface.
(RADC-TR-72-33)
AD-893 054/7 1340

RAYTHEON CO., WALTHAM, MA. RESEARCH DIV.

S-2796
Power FET Contact Technology.
AD-A092 320/1 1351

RCA CORP., LANCASTER, PA. SSD-ELECTRO-OPTICS AND DEVICES.

Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
AD-A092 078/5 1351

Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351

RCA GOVERNMENT AND COMMERCIAL SYSTEMS BURLINGTON MASS AEROSPACE SYSTEMS DIV

Development of a High Resolution Kinescope Recorder.
(AFAL-TR-74-41)
AD-922 009/6 1352

Silicon Target Return Beam Vidicon.
(AFAL-TR-74-134)
AD-923 171/3 1352

RCA GOVERNMENT COMMUNICATIONS SYSTEMS DIV CAMDEN N J

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.
(RADC-TR-72-27-Vol-1)
AD-892 041/5 1359

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
(RADC-TR-72-27-Vol-2)
AD-892 042/3 1359

RCA LABS., PRINCETON, NJ.

Photovoltaic Mechanisms in Polycrystalline Thin-Film Silicon Solar Cells. Quarterly Report No. 4, May 1-July 31, 1980.
DOE/ET/23108-5 1365

RCA SOLID STATE TECHNOLOGY CENTER, SOMERVILLE, NJ.

Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
(RADC-TR-80-177)
AD-A091 952/2 1359

RENSSELAER POLYTECHNIC INST., TROY, NY. DEPT. OF MATERIALS ENGINEERING.

Reprint: Modification of the Hillig-Charles Theory for Static Fatigue of Glass.
(ARO-14869.3-MS)
AD-A092 492/8 1367

Reprint: Importance of Crack Tip Radii in Fracture and Fatigue of Glass.
(ARO-14869.4-MS)
AD-A092 493/6 1367

RENSSELAER POLYTECHNIC INST., TROY, NY. DEPT. OF NUCLEAR ENGINEERING.

Development and Testing of a Model for Fire Potential in Nuclear Power Plants.

NUREG/CR-1819 1422

RENSSELAER POLYTECHNIC INST., TROY, NY. DEPT. OF PHYSICS.

Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
(ARO-14766.2-MS)
AD-A092 118/9 1333

RENSSELAER POLYTECHNIC INST., TROY, NY. PLASMA DYNAMICS LAB.

RPDL-80-14
Heavy Ion Beam Probing.
DOE/ET/53004-2 1447

RESEARCH GROUP INTERNATIONAL, CHARLOTTESVILLE, VA.

Study of Liability, Insurance and Indemnification Problems for FRA Programs.
PB81-124521 1300

RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, NC.

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
(NCHSR-80-55)
PB81-126860 1321

Targeted Study of Catastrophic Illness Addressing Spinal Injury.
(NCHSR-8-56)
PB81-128878 1321

RHODE ISLAND DEPT. OF HEALTH, PROVIDENCE.

Community Health Profiles 1979 Rhode Island Dept. of Health.
HRP-0902554/5 1320

RHODE ISLAND UNIV., KINGSTON.

UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
(W81-00503, OWRT-A-071-RI(1))
PB81-127417 1385

Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
(NSF/RA-800223)
PB81-132557 1317

RHODE ISLAND UNIV., KINGSTON. DEPT. OF CIVIL AND OCEAN ENGINEERING.

Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
(W81-00504, OWRT-A-070-RI(1))
PB81-127409 1385

RHODE ISLAND UNIV., KINGSTON. DEPT. OF MATHEMATICS.

Optimization of Multichannel Processing.
(AFOSR-TR-80-1146)
AD-A091 987/8 1358

RHODE ISLAND UNIV., KINGSTON. DEPT. OF SOCIOLOGY AND ANTHROPOLOGY.

ANTHROPOLOGY/WP-19
Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica,
(AID-PN-AAG-605)
PB81-125775 1291

RISOE NATIONAL LAB., ROSKILDE (DENMARK).

Nonlinear Kinematic Hardening under Non-Proportional Loading.
RISO-R-408 1372

ROCHESTER INST. OF TECH., NY. DEPT. OF ELECTRICAL ENGINEERING.

TR-2
Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

TR-3
Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358

TR-80-3
Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377

TR-80-4
Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358

ROCKWELL INTERNATIONAL, PALO ALTO, CA. ENERGY SYSTEMS GROUP.

Mobile Ambient Air Monitor.
RFP-3010 1398

ROCKWELL INTERNATIONAL, THOUSAND OAKS, CA. SCIENCE CENTER.

SC528.33FR
1.06 Micrometer High Sensitivity IR Photocathode.
(AFAL-TR-74-68)
AD-918 930/9 1411

SC5117.8TR
Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
AD-A092 253/4 1367

SC5222.1AR
Lifetime Prediction of Organic Coating/Metal System.
AD-A092 382/1 1368

TR-10
The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
AD-A092 247/6 1369

ROCKY MOUNTAIN FOREST AND RANGE EXPERIMENT STATION, FORT COLLINS, CO.

FSGTR/RM-78
Biotic Communities of the Southwest.
PB81-133134 1342

FSRP-RM-227
Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, NY.

RADC-TR-68-197
Engineering Evaluation of the Vanguard M-731 Viewer.
AD-833 815/4 1399

RADC-TR-71-83
Engineering Evaluation of the AR-109(XW-1) Viewer-Printer, Projection, Photographic.
AD-884 320/3 1399

RADC-TR-71-90
Coherent Rear Projection Viewer Evaluation.
AD-884 645/3 1399

RADC-TR-72-87
Testing of 19.2 KB/S MODEM.
AD-894 759/0 1360

RADC-TR-72-118
Thin Film Hybrid Pulse Width Discriminator Circuit Fabrication.
AD-900 343/5 1360

ROME AIR DEVELOPMENT CENTER, HANSCOM AFB, MA. DEPUTY FOR ELECTRONIC TECHNOLOGY.

RADC/ETR-80-0030
Reprint: Some Physical Insights into Beam Propagation in Strong Turbulence.
AD-A092 004/1 1440

RADC/ETR-80-0031
Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437

RADC/ETR-80-0032
Reprint: Frequency Dependence of Slant Path Rain Attenuations at 15 and 35 GHZ.
AD-A092 505/7 1413

ROYAL AIRCRAFT ESTABLISHMENT, FARNBOROUGH (ENGLAND).

RAE-LIBRARY BIB-371
Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938,
(DRIC-BR-75868)
AD-A091 915/9 1288

RAE-LIBRARY BIB-372
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
(DRIC-BR-75866)
AD-A091 916/7 1456

RAE-TR-79026
A New Angular Displacement Transducer.
(DRIC-BR-68394)
AD-C019 184/1 1396

RAE-TR-79120
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
(DRIC-BR-72779)
AD-A091 891/2 1288

RAE-TR-79133
Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
(DRIC-BR-71903)
AD-A092 161/9 1363

RAE-TR-80052
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
(DRIC-BR-74910)
AD-A091 886/8 1292

ROYAL SIGNALS AND RADAR ESTABLISHMENT, MALVERN (ENGLAND).

RSRE-MEMO-3249
POSER - A Process Organisation to Simplify Error Recovery,
(DRIC-BR-72727)
AD-A092 103/1 1354

RSRE-MEMO-3257
Microwave Frequency Memory,
(DRIC-BR-74217)
AD-A092 104/9 1354

SANDIA LABS., ALBUQUERQUE, NM.

CONF-801077-1
Technical Developments in the WIPP Program.
SAND-80-1599C 1425

SANDIA NATIONAL LABS., ALBUQUERQUE, NM.

CONF-791248-
High Temperature Electronics and Instrumentation Seminar Proceedings.
SAND-80-0834C 1348

CONF-800641-8
Active Measurements of Defect Processes in Shock Compressed Metals and Other Solids.
SAND-80-1945C 1372

CONF-800964-3
Design and Operation of the Sandia Pilot Plant.
SAND-80-1954C 1388

CONF-801027-2
STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421

CONF-801056-5
Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327

CONF-801121-2
STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421

CONF-801127-1
Influence of Air Motion Variation on the Performance of a Direct-Injection Stratified-Charge Engine.
SAND-79-8756 1456

IAEA-CN-39/102
Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327

SAND-80-0927
Light Water Reactor Safety Research Program. Volume 14.
NUREG/CR-1469-V-14 1428

Particle Beam Fusion Progress Report January 1979 Through June 1979.
SAND-79-1944 1418

Assessment of Potential Radionuclide Transport in Site-Specific Geologic Formations.
SAND-79-2468 1425

Performance Estimates for Personnel Access Control Systems.
SAND-80-0445 1421

Elastic Moduli of Boron Carbide/Copper Composites from -40 exp 0 C to 800 exp 0 C by Ultrasonic Methods.
SAND-80-0881 1369

Ultrasonic Measurement of Elastic Moduli of 17-4 pH Stainless Steel and Uranium -2 Molybdenum from -40 exp 0 C to 800 exp 0 C.
SAND-80-1121 1372

SAO PAULO UNIV. (BRAZIL). INST. DE FISICA.

Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
IFUSP-P-180 1448

SCHOOL OF AEROSPACE MEDICINE, BROOKS AFB, TX.

SAM-TR-78-339
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325

SAM-TR-79-240
Reprint: Nursing Introspection: Peer Review.
AD-A092 467/0 1319

SAM-TR-79-296
Reprint: The Effect of Errors in Diagnosis and Measurement on the Estimation of the Probability of an Event.
AD-A092 430/8 1377

SAM-TR-79-454
Reprint: Retinal Thermal Injury.
AD-A092 466/2 1326

SAM-TR-80-249
Reprint: Clinical Applications of Biofeedback.
AD-A092 429/0 1319

SCI SYSTEMS INC HUNTSVILLE ALA ADVANCED SYSTEMS DEPT

Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
(AFAL-TR-74-132-Vol-1)
AD-923 272/9 1358

SCIENCE APPLICATIONS, INC., EL SEGUNDO, CA.

SAI-76-543-LA
Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
(AFFDL-TR-75-100)
AD-B008 124/0 1289

SAI-76-547-LA
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
(AFFDL-TR-75-103)
AD-B007 943/4 1356

Spacecraft Charging Standard Report.
AD-A091 953/0 1456

SCIENCE APPLICATIONS, INC., LA JOLLA, CA.

SAI-131-80-603-LJ
Satellite Measurements of Atmospheric Aerosols.
AD-A092 152/8 1293

SAI-462-80-560-LJ
Time-Domain Method for Computing Forces and Moments Acting on Three Dimensional Surface-Piercing Ship Hulls with Forward Speed.

AD-A092 475/3 1393

Program Manual NSUP.
AD-A092 474/6 1393

Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
DOE/ET/20280-3 1365

SCIENCE APPLICATIONS, INC., MCLEAN, VA.

SAI-80-113-W/A-VOL-1
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
AD-A092 203/9 1309

SAI-80-113-W/A-VOL-2
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
AD-A092 155/1 1309

SCIENCE RESEARCH SYSTEMS, INC., RUSTON, LA.

Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329

SCIENTIFIC RESEARCH CENTER, SANTA MONICA, CA.

Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440

SECURITY STATE BANK, STARKVILLE, MS.

Solar Heating System at Security State Bank, Starkville, Mississippi. Final Report.
DOE/NASA/CR-161550 1379

SERTECH LABS., INC., SALEM, MA.

Burn-In of Uncased Semiconductors. A Feasibility Study.
AD-A092 076/9 1351

SEVILLE RESEARCH CORP., PENSACOLA, FL.

SEVILLE-TR-79-02-VOL-1
Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume I. Executive Summary.
AD-A092 020/7 1303

SEVILLE-TR-79-02-VOL-2
Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume II. Evaluation Report.
AD-A092 021/5 1303

SIGNATRON, INC., LEXINGTON, MA.

Adaptive Antenna Control (AAC) Program.
(CSA-76-8085-6)
AD-A092 030/6 1407

SINGER-GENERAL PRECISION INC SUNNYVALE CALIF LINK DIV

UC-7245
System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
(RADC-TR-71-51)
AD-883 122/4 1399

SKELLY AND LOY, HARRISBURG, PA.

General Application of the Critical Path Method to Resource Characterization and Planning for Underground Coal Mining. Final Technical Report.
DOE/ET/11268-3 1345

SLOAN-KETTERING INST. FOR CANCER RESEARCH, NEW YORK.

Genetic and Developmental Study of a Complex Locus in the House Mouse. Progress Report, 1979-1980.
COO-4159-6 1316

SMITHSONIAN INSTITUTION, WASHINGTON, DC.

TT-76-53241
Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343

SOLAR ENERGY RESEARCH INST., GOLDEN, CO.

Wind Energy Systems. Quarterly Review, April 1, 1980-June 30, 1980.
SERI/PR-635-770 1366

Review of Thermally Regenerative Electrochemical Systems. Volume I. Synopsis and Executive Summary.
SERI/TR-332-416(V.1) 1366

Comparative Ranking of 0.1-10 MW/sub E/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
SERI/TR-351-461 1366

SOUTH AUSTRALIA DIRECTOR-GENERAL OF TRANSPORT, ADELAIDE.

Light Rail Application and Design,
PB81-124620 1384

Passenger Transport Innovation in Adelaide: Taxi-Cabs.
PB81-125460 1384

SOUTH CAROLINA UNIV., COLUMBIA. COASTAL RESEARCH DIV.

TR-17-CRD
Influence of Wave Refraction on Coastal Geomorphology-Bull Island to Isle of Palms, South Carolina.
(ARO-13237.15-GS)
AD-A091 913/4 1341

Reprint: General Morphology and Sediment Patterns in Tidal Inlets.
(ARO-13237.8-GS)
AD-A092 115/5 1341

SOUTH CAROLINA WILDLIFE AND MARINE RESOURCES DEPT., CHARLESTON. MARINE RESOURCES CENTER.

Reprint: Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
(NOAA-80101510-3)
PB81-120768 1317

SOUTH DAKOTA STATE UNIV., BROOKINGS. WATER RESOURCES INST.

A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
(W81-00314, OWRT-B-052-SDAK(1))
PB81-127342 1291

SOUTHAMPTON UNIV. (ENGLAND). INST. OF SOUND AND VIBRATION RESEARCH.

ISVR-TR-104
Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388

ISVR-TR-107
Prediction of Impact Factor for Military Bridges.
PB81-130379 1386

SOUTHEASTERN WISCONSIN HEALTH SYSTEMS AGENCY, INC., MILWAUKEE.

Report on Cardiac Catheterization and Open Heart Surgery Services.
HRP-0902557/8 1320

SOUTHERN COLORADO ECONOMIC DEVELOPMENT DISTRICT, PUEBLO.

Water Availability for the City of Lamar, Colorado.
(EDA-80-0187)
PB81-130965 1386

SOUTHERN METHODIST UNIV., DALLAS, TX.

Thin Film Cadmium Telluride Solar Cells. Final Technical Report for Period July 1, 1979-August 31, 1980.
DOE/ET/23009-T10 1365

Thin Film Cadmium Telluride Solar Cells. Final Technical Report, July 1, 1979-August 31, 1980.
DOE/ET/23009-T11 1365

SOUTHERN RESEARCH INST., BIRMINGHAM, AL.

Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
(EPA-600/J-80-091, IERL-RTP-P-304)
PB81-122715 1338

Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
(EPA-600/J-80-089, IERL-RTP-P-107)
PB81-122723 1384

SOUTHWEST RESEARCH INST., SAN ANTONIO, TX.

SwRI-15-2315
Development and Evaluation of a Sonic Intrusion Detector.
(RADC-TR-68-535)
AD-500 169/8 1437

Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436

SOUTHWESTERN LIBRARY ASSOCIATION, STILLWATER, OK.

Planning Library Programs,
ED-183 163 1298

SPACE AND MISSILE SYSTEMS ORGANIZATION, LOS ANGELES, CA.

SAMSO-TR-72-122-Vol-4
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409

SAMSO-TR-72-122-Vol-7
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
AD-906 757/0 1409

SAMSO/XRS-71-1-Vol-4
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409

SAMSO/XRS-71-1-Vol-7
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
AD-906 757/0 1409

SPACE SCIENCES, INC., MONROVIA, CA.

A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
AD-A092 148/6 1456

SPECTROLAB, INC., SYLMAR, CA.

Advanced Aluminum-Chlorine Battery for Expendable ECM Devices.
(AFAPL-TR-75-18)
AD-B004 957/7 1366

SPECTRONICS, INC., RICHARDSON, TX.

Optical Couplers.
(AFAL-TR-74-314)
AD-B009 489/6 1440

SPIRE CORP., BEDFORD, MA.

SAR-80-10071-02
HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450

SPRINGBORN LABS., INC., ENFIELD, CT.

Development of a Two-Piece Mask and Lens and Mold for Same.
(ARCSL-CR-80031, AD-E410-332)
AD-A092 380/5 1326

SRI INTERNATIONAL, ARLINGTON, VA.

SRI-JSR-80-22
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439

SRI INTERNATIONAL, MENLO PARK, CA.

Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
(DNA-5324T)
AD-A091 980/3 1293

Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.
(ETL-0229)
AD-A092 146/0 1355

STANFORD LINEAR ACCELERATOR CENTER, CA.

CALT-68-792
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446

CONF-790774-
Quantum Chromodynamics.
SLAC-224 1447

CONF-800676-2
Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446

CONF-800724-38
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446

CONF-800824-23
Parity Violation in Polarized Electron Scattering.
SLAC-PUB-2619 1447

CONF-800829-8
Synthesis of Quantum Chromodynamics and Nuclear Physics.
SLAC-PUB-2595 1446

CONF-800994-2
High Intensity Polarized Electron Sources.
SLAC-PUB-2621 1441

CONF-8006108-3
Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446

SLAC Linear Collider Conceptual Design Report.
SLAC-229 1441

STANFORD RESEARCH INST., MENLO PARK, CA.

Titan Vehicle Electrostatic Environment.
(AFAL-TR-73-170)
AD-913 898/3 1457

STANFORD UNIV., CA.

CONF-800724-43
Hadronic Decays of the eta/sub C/.
SLAC-PUB-2594 1446

HEPL-879
Hadronic Decays of the eta/sub C/.
SLAC-PUB-2594 1446

STANFORD UNIV., CA. DEPT. OF COMPUTER SCIENCE.

STAN-CS-80-821
Semiantichains and Unichain Coverings in Direct Products of Partial Orders.
AD-A092 256/7 1377

STANFORD UNIV., CA. DEPT. OF OPERATIONS RESEARCH.

TR-53
An Approach to Regenerative Simulation on a General State Space.
AD-A092 221/1 1376

STANFORD UNIV., CA. EDWARD L. GINZTON LAB. OF PHYSICS.

Reprint: Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source.
(ARO-15278.10-P)
AD-A092 121/3 1294

STANFORD UNIV., CA. INST. FOR PLASMA RESEARCH.

Reprint: Origin of the Warped Heliospheric Current Sheet.
AD-A091 898/7 1292

STANFORD UNIV., CA. INTEGRATED CIRCUITS LAB.

ICL-17-78
Computer-Aided Engineering of Semiconductor Integrated Circuits.

(DELET-TR-79-0257-1)
AD-A091 969/6 1351

TR-DXG501-80
Computer-Aided Engineering of Semiconductor Integrated Circuits.
(DELET-TR-79-0257-1)
AD-A091 969/6 1351

STANFORD UNIV., CA. JOHN A. BLUME EARTHQUAKE ENGINEERING CENTER.

37
Risk and Public Policy.
(NSF/RA-790547)
PB81-120057 1394

STATE UNIV. OF NEW YORK AT ALBANY. DEPT. OF PHYSICS.

Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450

STATE UNIV. OF NEW YORK AT ALBANY. UNIV. LIBRARIES.

Reference Materials in Criminal Justice: A Selective, Annotated Bibliography,
ED-183 166 1298

STATE UNIV. OF NEW YORK AT BUFFALO. DEPT. OF CHEMISTRY.

TR-2
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332

STATENS VAEG- OCH TRAFIKINSTITUT, LINKOEPING (SWEDEN).

VTI/MEDDELANDE-172
Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas),
PB81-130775 1394

VTI/MEDDELANDE-181
Maetning av Braenslefoerbrukning pa Landsvaeg: Effektstudier vid Olika Vaeg- och Trafikmiljoeer (Measurement of Fuel Consumption on Country Roads: Study of Effects of Different Road and Traffic Situations),
PB81-130767 1363

VTI/MEDDELANDE-193
Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
PB81-128753 1389

VTI/MEDDELANDE-196
Yrkesfoerarutbildningen Infoer 1980-Talet. Resultat fran Gruppdiskussioner med Laerare Inom Yrkesfoerarutbildningen Inom Gymnasieskola och Arbetsmarknadsutbildning (Professional Driver Training for the 1980's. Opinions and Experiences of Professional Driver Teachers),
PB81-128472 1307

VTI-181
Vaegojaemnheters Inverkan pa Bilfoerares Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
PB81-129710 1328

STD RESEARCH CORP., ARCADIA, CA.

STDR-80-41
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447

STEVENS INST. OF TECH., HOBOKEN, NJ. DEPT. OF PHYSICS AND ENGINEERING PHYSICS.

SIT-P2002
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
(AFOSR-TR-80-1140)
AD-A091 991/0 1447

STRASBOURG-1 UNIV. (FRANCE). CENTRE DE RECHERCHES NUCLEAIRES.

0.5 to 6 MeV Ar Ion Induced X-Ray Emission in View to Analytical Application.
CRN-CPR-79-7 1336

Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336

Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443

Quasiconfigurations: An Approach to Effective Forces.
CRN-PN-78-26 1443

SUNDSTRAND CORP., ROCKFORD, IL. SUNDSTRAND ENERGY SYSTEMS.

Kilowatt Isotope Power System: Component Test Procedure for the Ground Demonstration System Radiator Bypass Valve.
DOE/ET/33001-T1 1430

Kilowatt Isotope Power System: Component Report for the Ground Demonstration System Accumulator.
DOE/ET/33001-T2 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Alternator Stator.
DOE/ET/33001-T3 1431

Kilowatt Isotope Power System. Phase II Plan. Volume III. Addendum Evaluation Criteria.
DOE/ET/33001-T9 1431

Kilowatt Isotope Power System: Test Procedure for the Ground Demonstration System. 77-KIPS-63.
DOE/ET/33001-T11 1430

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Pump. 77-KIPS-99.
DOE/ET/33001-T13 1430

Dynamic Isotope Power System: Technology Verification Phase. Component Test Specification for the Ground Demonstration System Alternator Stator. 79-DIPS-41.
DOE/ET/33001-T26 1431

Component Test Procedure for the Ground Demonstration System Jet Condenser Focusing.
DOE/ET/33001-T29 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Accumulator. 77-KIPS-100.
DOE/ET/33001-T30 1431

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Jet Condenser Orifice Performance. 77-KIPS-103.
DOE/ET/33001-T33 1431

SWANSON SERVICE CORP., HUNTINGTON BEACH, CA.

SSC-81980
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394

SWEDISH COUNCIL FOR BUILDING RESEARCH, STOCKHOLM.

D32:1980
Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394

D33:1980
Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395

D35:1980
Flat Plate Thermal Solar Collectors: A Physical Background,
PB81-135741 1363

ISBN-91-540-2981-3
Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394

ISBN-91-540-3321-7
Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395

ISBN-91-540-3329-2
Flat Plate Thermal Solar Collectors: A Physical Background,
PB81-135741 1363

SYNECTICS, CORP., ROME, NY.

CJ-0756-A
Bathymetric Data Reduction System.
(RADC-TR-80-273)
AD-A091 942/3 1348

SYSTAN, INC., LOS ALTOS, CA.

SYSTAN-D162-VOL-1
Food System Support of the Relocation Strategy in California. Volume I. Analysis.
AD-A092 056/1 1400

SYSTAN-D162-VOL-2
Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
AD-A092 164/3 1400

SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD.

A Survey of Computer Simulations of Digital Avionics Systems.
(AFWAL-TR-80-1057)
AD-A091 943/1 1288

SYSTEMS RESEARCH LABS., INC., DAYTON, OH.

Reprint: Suprathreshold Processing of Complex Visual Stimuli: Evidence for Linearity in Contrast Perception.
(AFAMRL-TR-79-5)
AD-A092 008/2 1326

Voice Countermeasures Effectiveness Analysis.
(AFAL-TR-73-230)
AD-912 392/8 1410

SYSTEMS, SCIENCE AND SOFTWARE, LA JOLLA, CA.

SSS-R-76-2986
A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
(AFATL-TR-76-97)
AD-B015 193/6 1433

SSS-R-80-4425
Late Time Containment.
(DNA-5293F)
AD-A092 214/6 1421

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
(AFATL-TR-76-45-Bk-1)
AD-B015 343/7 1435

HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
(AFATL-TR-76-45-Bk-2)
AD-B015 344/5 1435

TACTICAL WEAPON GUIDANCE AND CONTROL INFORMATION AND ANALYSIS CENTER, CHICAGO IL.

GACIAC-SR-80-02
Evaluation of RF Anechoic Chamber Fire Protection Systems.
(NWC-TP-6211, AD-E900-032)
AD-A092 478/7 1396

TECHNISCHE HOCHSCHULE, DARMSTADT (GERMANY, F.R.). INST. FUER HOCHFREQUENZTECHNIK.

New Passivation Methods of GaAs.
AD-A092 354/0 1450

TEKNEKRON RESEARCH, INC., BERKELEY, CA. SYSTEMS DIV.

Inspection Methods for Physical Protection Task III Review of Other Agencies' Physical Security Activities for Research Reactors.
UCRL-15275 1429

TEL-AVIV UNIV. (ISRAEL). DEPT. OF INTERDISCIPLINARY STUDIES.

Interdiffusion of Metals and Semiconductors.
(EOARD-TR-80-15)
AD-A091 961/3 1450

TEL-AVIV UNIV. (ISRAEL). DEPT. OF PHYSICS AND ASTRONOMY.

TAUP-132-80
Unification Through a Supergroup.
DOE/ER/03992-422 1444

TELEDYNE ENERGY SYSTEMS, TIMONIUM, MD.

Kilowatt Isotope Power System: Test Procedure for the EHSA Multifoil Insulation. 77-KIPS-109.
DOE/ET/33001-T4 1431

Kilowatt Isotope Power System: Component Test Report for the Electric Heat Source Assembly. 77-KIPS-108.
DOE/ET/33001-T10 1430

Kilowatt Isotope Power System: Test Report for the Radiator Long and Short Panels. 77-KIPS-112.
DOE/ET/33001-T14 1431

Kilowatt Isotope Power System: Test Procedure for the Radiator. 78-KIPS-4.
DOE/ET/33001-T31 1431

Kilowatt Isotope Power System: Test Procedure for the Radiator Long and Short Panels. 77-KIPS-111.
DOE/ET/33001-T32 1431

TELEDYNE GEOTECH, ALEXANDRIA, VA. SEISMIC DATA ANALYSIS CENTER.

SDAC-TR-78-1
Spectral Ratios for Explosions in Salt.
AD-A091 911/8 1349

SDAC-TR-79-9
Relationship between Ms and mb for Small Earthquakes in Uzbekistan, USSR.
AD-A091 984/5 1349

SDAC-TR-79-10
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353

TEMPLE UNIV., PHILADELPHIA, PA. DEPT. OF PHYSICS.

Technique for Adaptive Data Analysis.
COO-3539-13 1422

TENNESSEE VALLEY AUTHORITY, MUSCLE SHOALS, AL.

PAT-APPL-916 988
Granulation and Coating by Improved Method of Heat Removal.
PATENT-4 213 924 1390

PB81-116667
Granulation and Coating by Improved Method of Heat Removal.
PATENT-4 213 924 1390

TEXAS A AND M UNIV., COLLEGE STATION.

Catalytic Conversion of Oxygenated Compounds to Low Molecular Weight Olefins. Progress Report for the Period March 1, 1980 to August 31, 1980.
DOE/PC/04717-5 1331

TEXAS A AND M UNIV., COLLEGE STATION. DEPT. OF CHEMISTRY.

TR-6
Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 162/7 1333

TEXAS HEART INST., HOUSTON.

Development and Evaluation of a Long-Term Low Profile Intracorporeal (Abdominal) Left Ventricular Assist Device (THI E-Type ALVAD) Fascicle I.
(NIH-N01-HV-7-2936-2)
PB81-131773 1324

TEXAS INSTRUMENTS, INC., DALLAS.
TI-U3-707600-02
RF-4C Digital Signal Transfer Unit Multisensor Display System (DSTUMDS).
(AFAL-TR-75-170)
AD-B010 501/5 1435

TEXAS INSTRUMENTS, INC., DALLAS. CENTRAL RESEARCH LABS.
TI-08-74-41
Magnetic Bubble Research.
(AFAL-TR-74-196)
AD-B002 919/9 1437

TEXAS INSTRUMENTS, INC., DALLAS. ECOLOGICAL SERVICES.
Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
(PPSP/CPC-80-7)
PB81-132052 1323

TEXAS TECH UNIV., LUBBOCK. INST. FOR BIOTECHNOLOGY.
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324

TEXAS TECH UNIV., LUBBOCK. LASER LAB.
Studies of Transient Discharges.
(AFOSR-TR-80-1043)
AD-A092 482/9 1437

TEXAS UNIV. AT AUSTIN.
Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335

TEXAS UNIV. AT AUSTIN. CENTER FOR PARTICLE THEORY.
CONF-8006126-1
New Experimental Evidence for a New Interpretation of Flavor SU(3).
DOE/ER/03992-402 1444
Sequential Internal Supersymmetry.
DOE/ER/03992-412 1444
Geometric Ghosts and Unitarity.
DOE/ER/03992-413 1444
Color in Internal Supersymmetry Unification.
DOE/ER/03992-414 1444
Soft-Group-Manifold Structure of Supergravity, and the Proof of Unitarity.
DOE/ER/03992-417 1448

TEXAS UNIV. AT AUSTIN. CENTER FOR RESEARCH IN WATER RESOURCES.
CRWR-171
Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387

TEXAS UNIV. AT AUSTIN. CENTER FOR TRANSPORTATION RESEARCH.
CTR-3-8-75-177-15
Precast Repair of Continuously Reinforced Concrete Pavement.
(FHWA/TX-79/26-177-15)
PB81-123705 1384

TEXAS UNIV. AT AUSTIN. DEPT. OF CHEMISTRY.
TR-13
On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333
TR-14
The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339
Photocatalytic Reaction of Water with Carbon over Platinized Titania.
AD-A092 222/9 1333
On the Photoassisted Hydrogen Production from Titanis and Water.
AD-A092 223/7 1333

TEXAS UNIV. AT AUSTIN. DEPT. OF ELECTRICAL ENGINEERING.
Reprint: Spectral Domain Analysis of Dominant and Higher Order Modes in Fin-Lines.
(ARO-16171.2-EL)
AD-A092 120/5 1351

TEXAS UNIV. AT AUSTIN, PORT ARANSAS. MARINE SCIENCE INST.
Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
(BLM/YM/ES-76/8)
PB81-137689 1340

TEXAS UNIV. AT AUSTIN. SCHOOL OF ARCHITECTURE.
Continuing Development of the DEROB System. Quarterly Report, July 1, 1980-September 30, 1980.
DOE/CS/30254-1 1357

THERMACORE, INC., LANCASTER, PA.
Investigation of Non-Magnetic Alloys for the Suppression of Tritium Permeation.
DOE/ER/10087-T2 1415

THERMO ELECTRON CORP., WALTHAM, MA.
DOE/JPL Advanced Thermionic Technology Program. Progress Report No. 42.
COO-3056-56 1364

TRANSPORT AND ROAD RESEARCH LAB., CROWTHORNE (ENGLAND).
TRRL-SUPPLEMENTARY-548
A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385
TRRL-SUPPLEMENTARY-591
Research on Energy Conservation for Cars and Goods Vehicles,
PB81-129090 1363

TRANSPORTATION SYSTEMS CENTER, CAMBRIDGE, MA.
DOT-TSC-UMTA-80-15
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
(UMTA-MA-06-0051-80-2)
PB81-124869 1389
DOT-TSC-UMTA-80-20
Bus Driver Training Simulator Assessment.
(UMTA-MA-06-0074-80-1)
PB81-128977 1307
TSC-FAA-80-18
Airport Ground Access Planning Guide.
(FAA-EM-80-9)
AD-A092 018/1 1290
TSC-USCG-80-1
Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
(USCG-D-54-80)
AD-A092 158/5 1392

TRC ENVIRONMENTAL CONSULTANTS, INC., WETHERSFIELD, CT.
Meteological and Air Quality Data, Quarterly Report. WIPP Site: Eddy County, New Mexico. Autumn Quarter, September 1977-November 1977.
SAND-80-7121 1425

TRW DEFENSE AND SPACE SYSTEMS GROUP, REDONDO BEACH, CA. SPACE SCIENCES DEPT.
TRW-30435-6007-RU-00
A Study of the Association of Pc 3, 4 Micropulsations with Interplanetary Magnetic Field Orientation & Other Solar Wind Parameters.
(AFOSR-TR-80-1161)
AD-A092 369/8 1292

TRW, INC., LAWNDALE, CA. SEMICONDUCTOR DIV.
Modulator Driver Transistor.
(AFAL-TR-74-27)
AD-917 847/6 1352

TRW SYSTEMS GROUP, REDONDO BEACH, CA.
TRW-13133-6009-RO-00
LSI Correlator.
AD-887 376/2 1359
TRW-13133-6011-RO-00
LSI Correlator.
AD-892 277/5 1360
TRW-131333-6010-RO-00
LSI Correlator.
AD-890 094/6 1359
LSI Correlator.
AD-900 818/6 1360

TSUKUBA UNIV., IBARAKI (JAPAN). TANDEM ACCELERATOR CENTER.
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447

UKAEA ATOMIC ENERGY RESEARCH ESTABLISHMENT, HARWELL (ENGLAND). ENVIRONMENTAL AND MEDICAL SCIENCES DIV.
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335

UKAEA DOUNREAY (SCOTLAND). NUCLEAR POWER DEVELOPMENT ESTABLISHMENT.
Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
DOUNREAY-TRANS-826 1337

UKAEA, HARWELL (ENGLAND). ATOMIC ENERGY RESEARCH ESTABLISHMENT.
AERE-R-7477
Harwell Subroutine Library. A Catalogue of Subroutines (1973).
AD-A092 033/0 1375
AERE-R-7477-SUPPL-2
Harwell Subroutine Library. A Catalogue of Subroutines (1973). Supplement Number 2.
AD-A092 034/8 1375

UKAEA, WINFRITH (ENGLAND). ATOMIC ENERGY ESTABLISHMENT.
Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441

UNC NUCLEAR INDUSTRIES, INC., RICHLAND, WA.
Ultrasonic Flowmeters: A Progress Report.
UNI-TR-4 1398

UNDERSEA MEDICAL SOCIETY, INC., BETHESDA, MD.
UMS-PUB-21(DR)
Interaction of Drugs in the Hyperbaric Environment, Bethesda, Maryland, 13-14 September 1979. The Undersea Medical Workshop (21st),
AD-A092 451/4 1328

UNION CARBIDE CORP., BOUND BROOK, NJ. CHEMICALS AND PLASTICS.
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
(NIH-N01-HV-4-2950-6)
PB81-132987 1324

UNIROYAL, INC., NAUGATUCK, CT. CONSUMER PRODUCTS DIV.
Production of Insulated Footwear Using Liquid Injection Molding Equipment. 1. Method.
(NATICK-TR-80/018, NATICK/CEMEL-216)
AD-A091 881/3 1400

UNITED AIRCRAFT RESEARCH LABS EAST HARTFORD CONN
Ruggedized CO2 Packaged Laser.
(AFAL-TR-74-110)
AD-919 850/8 1440

UNITED STATES STEEL CORP MONROEVILLE PA APPLIED RESEARCH LAB
ARL-B-70003
Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370

UNITED TECHNOLOGIES CORP., SUNNYVALE, CA. CHEMICAL SYSTEMS DIV.
Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
(NWC-TP-5835, GIDEP-E069-2686)
AD-B014 875/9 1455

UNITED TECHNOLOGIES RESEARCH CENTER, EAST HARTFORD, CT.
UTRC-R75-952051-13
Three to Five Micron VET Laser Investigation.
(AFAL-TR-76-57)
AD-B015 026/8 1439
UTRC/R80-922617-5
Investigation of Plasma Processes in Electronic Transition Lasers.
AD-A091 903/5 1439
UTRC-R-80-954876-1
Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
DOE/ET/53087-2 1448

UNIVERSIDADE ESTADUAL DE CAMPINAS (BRAZIL). INST. DE FISICA.
Laser Modes as an Eigenfunction of an Operator Equation.
INIS-mf-5653 1440

UNIVERSIDADE FEDERAL FLUMINENSE, NITEROI (BRAZIL). INST. DE FISICA.
Magnetic Excitations in Amorphous Ferromagnets.
INIS-mf-5654 1451

UNIVERSITIES COUNCIL FOR EARTHQUAKE ENGINEERING RESEARCH, PASADENA, CA.
UCEER-6
Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980.
(NSF/RA-800246)
PB81-120081 1350

UNIVERSITY OF SOUTHERN MISSISSIPPI, HATTIESBURG.
Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
(EPA-600/J-80-148, ERL.GB-0093)
PB81-129546 1317

UOP, INC., MCLEAN, VA.
First Technical Contractors' Conference on Peat. Final Report.
DOE/ET/10159-T3 1342

URBAN AND RURAL SYSTEMS ASSOCIATES, SAN FRANCISCO, CA.
URSA-77-17
CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
(DLMA-20-06-78-07-1)
PB81-126039 1300
URSA-77-17
CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
(DLMA-20-06-78-07-2)
PB81-126047 1300
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
(DLMA-20-06-78-07)
PB81-125619 1303

URBAN INST., WASHINGTON, DC.
UI-216-34
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,

(HUD-0001404)
PB81-139016 1310

UI-1116
Urban Housing with Discrete Structures,
(HUD-0001426)
PB81-139057 1311

Services in Support of Housing Search: How Necessary and Effective in the Experimental Housing Allowance Program,
(HUD-0001398)
PB81-138992 1310

Enforcing Housing Quality Standards: Some Findings From the Experimental Housing Allowance Program,
(HUD-0001401)
PB81-139008 1310

Integrated Analysis of the Experimental Housing Allowance Program: Sixth Year Report.
(HUD-0001410)
PB81-139024 1310

Metropolitan Housing and the Income Tax,
(HUD-0001425)
PB81-139040 1311

UTAH UNIV. RESEARCH INST., SALT LAKE CITY. EARTH SCIENCE LAB.

ESL-38
Geology of the Colado Geothermal Area, Pershing County, Nevada.
DOE/ID/12079-8 1343

ESL-43
Bipole-Dipole Survey at Roosevelt Hot Springs, Thermal Area, Beaver County, Utah.
DOE/ID/12079-15 1342

UTAH WATER RESEARCH LAB., LOGAN.

UWRL/P-80/05
Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
(W81-00502, OWRT-A-046-UTAH(1))
PB81-127383 1344

VECTOR RESEARCH, INC., ANN ARBOR, MI.

VRI-ARI-3-FR79-3
Description of the Tactical Operations System Information Flow Model.
(ARI-RN-80-13)
AD-A092 206/2 1408

VRI-ARI-3-FR79-4
Analysis of Information Flow in the Tactical Operations System (TOS).
(ARI-RN-80-12)
AD-A092 205/4 1408

VRI-ARI-3-FR80-3
User's Manual for the Tactical Operations System Analysis Package.
(ARI-RN-80-14)
AD-A092 207/0 1403

VRI-ARI-3-FR80-4
Programmer's Manual for the Tactical Operations System Analysis Package.
(ARI-RN-80-15)
AD-A092 208/8 1408

VIRGINIA COMMONWEALTH UNIV., RICHMOND.

Study of Pathogenic Free-Living Amebas in Fresh-Water Lakes in Virginia.
(EPA-600/1-80-037)
PB81-126450 1322

VIRGINIA POLYTECHNIC INST. AND STATE UNIV., BLACKSBURG. DEPT. OF ENGINEERING SCIENCE AND MECHANICS.

VPI-E-80.30
Seismic Stability Evaluation of Earth Structures.
PB81-123069 1351

VIRGINIA STATE TELECOMMUNICATIONS STUDY COMMISSION, RICHMOND.

Higher Education Uses of Telemedia in Virginia. Telecommunications Study Commission.
ED-183 206 1409

Telemedia Research and Innovation. Telecommunications Study Commission.
ED-183 208 1410

VIRGINIA UNIV., CHARLOTTESVILLE. DEPT. OF CHEMISTRY.

TR-34
Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332

TR-35
Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331

TR-36
Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331

Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
(ARO-17042.1-C)
AD-A092 497/7 1335

VIRGINIA UNIV., CHARLOTTESVILLE. DEPT. OF MECHANICAL AND AEROSPACE ENGINEERING.

Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
(ARO-14100.1-E)
AD-A091 905/0 1454

VIRGINIA WATER RESOURCES RESEARCH CENTER, BLACKSBURG.

VPI-VWRRC-BULL-129
Direct Filtration of Virginia Surface Waters: Feasibility and Costs.
(W81-00501, OWRT-A-081-VA(1))
PB81-127391 1385

WALTER REED ARMY INST. OF RESEARCH, WASHINGTON, DC.

Reprint: Isolation and Characterization of Minicell-Producing Mutants and Shigella spp.
AD-A091 918/3 1317

Reprint: Experimental Endotoxin Shock: The Pathophysiologic Function of Endorphins and Treatment with Opiate Antagonists.
AD-A091 919/1 1317

Reprint: Immune Reactivities of Antibodies against Glycolipids.
AD-A092 002/5 1317

Reprint: Influence of Temperature on Complement-Dependent Immune Damage to Lipsomes.
AD-A092 087/6 1318

Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319

Reprint: Naloxone Alteration of Physiological Parameters in Spinally Transected Animals.
AD-A092 340/9 1325

Reprint: Opiate-Like Effects of Electroconvulsive Shock in Rats: A Differential Effect of Naloxone on Nociceptive Measures.
AD-A092 341/7 1325

Reprint: Reduction of Heroin Intake in Baboons by an Economic Constraint.
AD-A092 342/5 1325

Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319

WALTER REED ARMY MEDICAL CENTER, WASHINGTON, DC.

Reprint: Lack of Diagnostic Utility of Febrile Agglutinin Screens.
AD-A092 085/0 1318

WASHINGTON STATE UNIV., PULLMAN. DEPT. OF POLITICAL SCIENCE.

The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
(W81-00319, OWRT-C-80093-P(8403)(3))
PB81-138141 1387

WASHINGTON STATE UNIV., PULLMAN. NUCLEAR RADIATION CENTER.

Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336

WASHINGTON UNIV., SEATTLE.

Production of Optically Thin Free-Standing Oil Films from the Edge of a Rotating Disc.
DOE/ER/01388-457 1441

WASHINGTON UNIV., SEATTLE. DEPT. OF OCEANOGRAPHY.

CONTRIB-1143
Reprint: Freshwater and Atlantic Water in the Kara Sea.
AD-A091 965/4 1348

TR-18
Reprint: Freshwater and Atlantic Water in the Kara Sea.
AD-A091 965/4 1348

WASHINGTON UNIV., SEATTLE. DEPT. OF PHYSICS.

CONF-800824-24
Polarized Proton Radiative Capture Studies of Giant Resonances.
DOE/ER/01388-454 1443

WASHINGTON UNIV., SEATTLE. FUSION PLASMA PROGRAM.

Experimental Program Based on a High Beta Q Machine. Final Report, 1 May 1978-30 September 1980.
DOE/ET/53081-1 1448

WASHINGTON UNIV., SEATTLE. LAB. FOR CHEMOMETRICS.

TR-18
UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
AD-A092 213/8 1333

WASHINGTON UNIV., ST. LOUIS, MO.

CONF-800724-41
Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446

WAYNE STATE UNIV., DETROIT, MI.

Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
(ARO-15746.4-MS)
AD-A092 490/2 1396

WEAPONS SYSTEMS RESEARCH LAB., ADELAIDE (AUSTRALIA).

AR-002-011
Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433

AR-002-043
Results from Trials of a New Yawsonde Design.
PB81-120222 1434

WSRL-0166-TR
Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433

WSRL-0172-TR
Results from Trials of a New Yawsonde Design.
PB81-120222 1434

WEIDLINGER ASSOCIATES, NEW YORK.

Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
(DNA-5253F)
AD-A092 274/0 1342

Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
(NSF/RA-790528)
PB81-122533 1393

Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429

WEST VIRGINIA UNIV., MORGANTOWN. DEPT. OF AEROSPACE ENGINEERING.

Effects of Flow Curvature on the Aerodynamics of Darrieus Wind Turbines.
ORO-5135-77/7 1362

WEST VIRGINIA UNIV., MORGANTOWN. DEPT. OF ANATOMY.

Effects of Effluents of Coal Combustion and Gasification Upon Lung Structure and Function. Annual Report.
DOE/MC/11284-T2 1328

WESTINGHOUSE ELECTRIC CORP BALTIMORE MD ELECTRONIC SYSTEMS SUPPORT DIV

Data Link. Helicopter Supported Radar.
(RADC-TR-71-119)
AD-885 551/2 1413

WESTINGHOUSE ELECTRIC CORP., PITTSBURGH, PA.

Operational Analysis of Open-Cycle MHD. Final Report.
EPRI-AP-1463 1366

WESTINGHOUSE ELECTRIC CORP., PITTSBURGH, PA. FUSION POWER SYSTEMS DEPT.

Structural Evaluation of a DTHR Bundle Divertor Particle Collector.
WFPS-TME-78-100 1420

WESTINGHOUSE ELECTRIC CORP., PITTSBURGH, PA. RESEARCH AND DEVELOPMENT CENTER.

Silicon Web Process Development.
DOE/JPL/954654-80/12 1331

WESTINGHOUSE RESEARCH AND DEVELOPMENT CENTER, PITTSBURGH, PA.

Programmable Assembly Research Technology Transfer to Industry - Phase 2.
(NSF/RA-790394)
PB81-132714 1390

WHITE SANDS MISSILE RANGE, NM. INSTRUMENTATION DIRECTORATE.

STEWS-ID-80-2
Automated Reading of Videotape.
AD-A092 224/5 1355

WINTHROP COLL., ROCK HILL, SC.

An Inventory to the Records of the 1977 South Carolina International Women's Year Conference.
ED-183 154 1298

WISCONSIN UNIV.-MADISON.

CONF-801119-(Exc.)(Absts.)
Abstracts of Papers Presented at the Twenty-Second Annual Meeting of the Division of Plasma Physics of the American Physical Society.
DOE/ET/53051-8 1416

High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447

Lower Hybrid Heating Associated with Mode Conversion on the Wisconsin Toroidal Octupole.
DOE/ET/53051-10 1447

Stability Analysis of Cylindrical Vlasov Equilibria.
DOE/ET/53051-113 1447

Organization of the R Chromosome Region in Maize. Triennial Report.
DOE/EV/01300-45 1316

WISCONSIN UNIV.-MADISON. DEPT. OF MATHEMATICS.

Reprint: Nonlinearly Perturbed Volterra Equations.
(ARO-14035.41-M)
AD-A092 495/1 1377

WISCONSIN UNIV.-MADISON. DEPT. OF PHYSICS.

CONF-800724-33
Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446

WISCONSIN UNIV.-MADISON. DEPT. OF SOIL SCIENCE.

Exchange of Lyotropic Series Cations by Micaceous Vermiculite and Its Weathering Products Determined by Electron Microscopy and Radiochemical Analysis. Final Technical Report, June 1, 1965-October 31, 1978.
DOE/EV/01515-84 1426

WISCONSIN UNIV.-MADISON. MATHEMATICS RESEARCH CENTER.

MRC-TSR-2078
A Population of Linear, Second Order, Elliptic Partial Differential Equations on Rectangular Domains. Part 1.
AD-A092 248/4 1376

WISCONSIN UNIV. MILWAUKEE. COLL. OF ENGINEERING AND APPLIED SCIENCE.

Synthesis of Research and Development in Mechanical Energy Storage Technologies. Progress Report, September 1, 1979-May 31, 1980.
DOE/ET/26106-T1 1366

WISCONSIN UNIV.-MILWAUKEE. DEPT. OF PHYSICS.

Characterization of Superconductors by Surface Wave Techniques.
(AFOSR-TR-80-1173)
AD-A092 387/0 1450

WOODS HOLE OCEANOGRAPHIC INSTITUTION, MA.

WHOI-CONTRIB-3985
Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349

WHOI-CONTRIB-4199
Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341

WHOI-CONTRIB-4252
Reprint: Acoustics and the Behavior of Sperm Whales.
AD-A092 082/7 1340

WHOI-CONTRIB-4260
Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340

WHOI-CONTRIB-4300
Reprint: Click Sounds from Animals at Sea.
AD-A092 064/5 1340

WHOI-CONTRIB-4303
Reprint: Eddies Off the Somali Coast During the Southwest Monsoon.
AD-A092 324/3 1341

WHOI-CONTRIB-4326
Reprint: Critical Layers and the Garrett-Munk Spectrum.
AD-A092 464/7 1342

WHOI-CONTRIB-4339
Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342

WHOI-CONTRIB-4340
Reprint: Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.
AD-A092 327/6 1341

WHOI-CONTRIB-4341
Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342

WHOI-CONTRIB-4355
Reprint: Anomalous Water in the Deep Ocean Suggests Lateral Advection-Stirring.
AD-A092 000/9 1348

WHOI-CONTRIB-4359
Reprint: Flow Structures of the Benthic Ocean.
AD-A092 325/0 1341

WHOI-CONTRIB-4394
Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407

WHOI-CONTRIB-4403
Reprint: A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom.
AD-A091 880/5 1436

WHOI-CONTRIB-4419
Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406

WHOI-CONTRIB-4421
Reprint: Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
AD-A092 001/7 1340

WHOI-CONTRIB-4422
Reprint: On Production and Dissipation of Thermal Variance in the Oceans.
AD-A092 486/0 1349

WHOI-80-43
Seasonal Variability in the Intermediate Waters of the Eastern North Atlantic.
AD-A091 937/3 1341

WHOI-80-44
Reprint: Anomalous Water in the Deep Ocean Suggests Lateral Advection-Stirring.
AD-A092 000/9 1348

WHOI-80-45
Reprint: Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
AD-A092 001/7 1340

WHOI-80-46
Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406

WHOI-80-47
Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341

WHOI-80-48
Reprint: Click Sounds from Animals at Sea.
AD-A092 064/5 1340

WHOI-80-51
Reprint: Acoustics and the Behavior of Sperm Whales.
AD-A092 082/7 1340

WHOI-80-52
Composition and Characteristics of Particles in the Ocean: Evidence for Present Day Resuspension.
AD-A092 231/0 1349

WHOI-80-54
Reprint: Migration Rate of Mud Bacteria as a Function of Magnetic Field Strength.
AD-A092 326/8 1340

WHOI-80-55
Reprint: Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.
AD-A092 327/6 1341

WHOI-80-56
Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342

WHOI-80-57
Reprint: On Production and Dissipation of Thermal Variance in the Oceans.
AD-A092 486/0 1349

WHOI-80-58
Reprint: Eddies Off the Somali Coast During the Southwest Monsoon.
AD-A092 324/3 1341

WHOI-80-59
Reprint: Flow Structures of the Benthic Ocean.
AD-A092 325/0 1341

WHOI-80-60
Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349

WHOI-80-61
Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407

WHOI-80-62
Reprint: Critical Layers and the Garrett-Munk Spectrum.
AD-A092 464/7 1342

WHOI-80-64
Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340

WHOI-80-65
Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342

WOODS HOLE OCEANOGRAPHIC INSTITUTION, MA. DEPT. OF GEOLOGY AND GEOPHYSICS.

WHOI-CONTRIB-4068
Reprint: Oblique Anhysteretic Remanent Magnetization.
AD-A092 081/9 1349

WHOI-80-50
Reprint: Oblique Anhysteretic Remanent Magnetization.
AD-A092 081/9 1349

WOODS HOLE OCEANOGRAPHIC INSTITUTION, MA. DEPT. OF PHYSICAL OCEANOGRAPHY.

WHOI-CONTRIB-4223
Reprint: Geostrophic Vorticity Balance in Midocean.
AD-A092 080/1 1341

WHOI-80-49
Reprint: Geostrophic Vorticity Balance in Midocean.
AD-A092 080/1 1341

WOODWARD ASSOCIATES, INC., SAN DIEGO, CA.

WA-79-50F
Steering System Survey for Surface Mining Equipment.
(BUMINES-OFR-132-80)
PB81-130866 1348

WOODWARD-CLYDE CONSULTANTS, SAN FRANCISCO, CA.

Preliminary Geochemical and Physical Testing of Materials for Plugging of Man-Made Accesses to a Repository in Basalt.
RHO-BWI-C-66 1425

WORLD DATA CENTER A FOR SOLAR-TERRESTRIAL PHYSICS, BOULDER, CO.

UAG-78
The Equatorial Latitude of Auroral Activity during 1972-1977,
(NOAA-80102802)
PB81-132912 1294

WRIGHT STATE UNIV., DAYTON, OH. COLL. OF BUSINESS AND ADMINISTRATION.

The Study of Production Leadtime Forecasting Models.
(AFOSR-TR-80-1121)
AD-A091 970/4 1390

YARSLEY RESEARCH LABS. LTD., CHESSINGTON (ENGLAND).

Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
(HUD-0001569)
PB81-139370 1374

Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F).
(HUD-0001570)
PB81-139388 1374

YOUNG (ARTHUR) AND CO., WASHINGTON, DC.

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume I.
PB81-123424 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume II.
PB81-123432 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System.
PB81-123440 1306

A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Systems Users Manual.
PB81-123457 1306

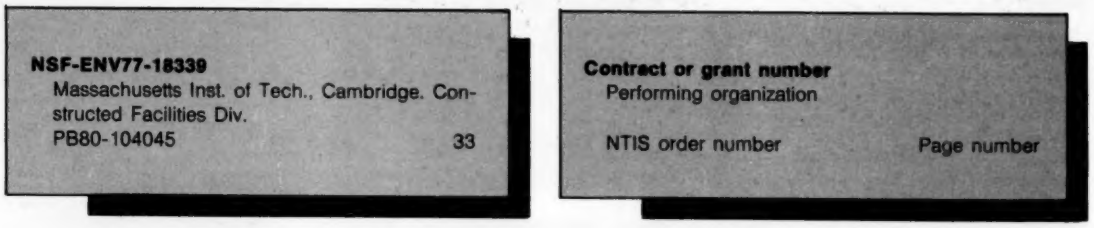
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. System Operations Manual.
PB81-123465 1306

CONTRACT/GRANT NUMBER INDEX

NTIS®

Entries in this index list reports produced as a result of research done under specific contract or grant numbers. Entries are arranged first, alphanumerically, by the contract or grant number, and then by the corporate or performing organization.

SAMPLE ENTRY



AC01-76ET10104
Pittsburg and Midway Coal Mining Co., Englewood, CO.
DOE/ET/10104-T4(V.1) 1330
Washington State Univ., Pullman. Nuclear Radiation Center.
DOE/ET/10104-T3 1336

AC01-76ET10251
Institute of Gas Technology, Chicago, IL.
CONF-800814-25 1452

AC01-77ET20160
Northrop Services, Inc., Huntsville, AL.
DOE/CS/20160-01(V.5) 1362

AC01-78ET10159
North Carolina Univ. at Chapel Hill. Dept. of Geology.
DOE/ET/10159-T1 1342
UOP, Inc., McLean, VA.
DOE/ET/10159-T3 1342

AC01-79CS30027
Automation Industries, Inc., Silver Spring, MD. Vitro Labs. Div.
SOLAR/1029-80/14 1380

AC01-79ET11268
Skelly and Loy, Harrisburg, PA.
DOE/ET/11268-3 1345

AC01-79ET23108
RCA Labs., Princeton, NJ.
DOE/ET/23108-5 1365

AC01-79RA20014
Input Output Computer Services, Inc., Washington, DC.
DOE/RA/20014-T1 1345

AC01-80ET15602
FluiDyne Engineering Corp., Minneapolis, MN.
DOE/ET/15602-T1 1364

AC02-76CH00016
Brookhaven National Lab., Upton, NY.
BNL-NCS-50496(Ed.2) 1441
BNL-NCS-51184 1442
BNL-NUREG-26903 1427
BNL-28193 1423
BNL-28288 1427
BNL-28292 1441
BNL-28301 1420
BNL-28305 1442
BNL-28323 1441
BNL-28332 1335
BNL-28347 1335
BNL-28353 1442
BNL-28357 1442
BNL-28363 1315
BNL-28375 1414
BNL-28428 1319
BNL-51188 1414
Corning Glass Works, NY.
BNL-28423 1315
National Water Well Association, Worthington, OH.
BNL-51224(V.1) 1344
BNL-51224(V.2) 1344

AC02-76CH0300
California Univ., Berkeley. Lawrence Berkeley Lab.
LBL-11561 1446

AC02-76CH03000
Fermi National Accelerator Lab., Batavia, IL.
CONF-800980-20 1352

AC02-76ER01198
Illinois Univ. at Urbana-Champaign.
DOE/ER/01198-1323 1450

AC02-76ER03069
Massachusetts Inst. of Tech., Cambridge.
CONF-800724-44 1443
CONF-800724-45 1443
CONF-800863-3 1443

AC02-76ER03130
Brown Univ., Providence, RI. Dept. of Physics.
COO-3130TA-352 1443

AC02-76ET20108
Martin Marietta Aerospace, Denver, CO. Denver Div.
DOE/ET/20108-T1 1357

AC02-76ET20279
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
DOE/ET/20279-105 1365

AC02-77CH00178
Solar Energy Research Inst., Golden, CO.
SERI/PR-635-770 1366
SERI/TR-332-416(V.1) 1366
SERI/TR-351-461 1366

AC02-77ET10081
Radian Corp., Austin, TX.
COO-4596-T1 1357

AC02-77ET13046
Memphis Light, Gas and Water Div., TN.
DOE/ET/13046-T72 1330

AC02-77ET20050
Dynatech R/D Co., Cambridge, MA.
DOE/ET/20050-T1 1453

AC02-77ET33001
Sundstrand Corp., Rockford, IL. Sundstrand Energy Systems.
DOE/ET/33001-T1 1430
DOE/ET/33001-T2 1431
DOE/ET/33001-T3 1431
DOE/ET/33001-T9 1431
DOE/ET/33001-T11 1430
DOE/ET/33001-T13 1430
DOE/ET/33001-T26 1431
DOE/ET/33001-T29 1431
DOE/ET/33001-T30 1431
DOE/ET/33001-T33 1431
Teledyne Energy Systems, Timonium, MD.
DOE/ET/33001-T4 1431
DOE/ET/33001-T10 1430
DOE/ET/33001-T14 1431
DOE/ET/33001-T31 1431
DOE/ET/33001-T32 1431

CONTRACT/GRANT NUMBER INDEX

AC02-77ET35202
General Electric Co., Sunnyvale, CA. Advanced Reactor Systems Dept.
COO-4057-12 1427

AC02-77ET52043
Westinghouse Electric Corp., Pittsburgh, PA. Fusion Power Systems Dept.
WFPS-TME-78-100 1420

AC02-78ET15383
Engelhard Minerals and Chemicals Corp., Edison, NJ. Engelhard Industries Div.
DOE/ET/15383-3 1364
DOE/ET/15383-15 1364
DOE/ET/15383-18 1364
DOE/ET/15383-22 1364

AC02-78ET53073
Massachusetts Inst. of Tech., Cambridge.
DOE/ET/53073-T1 1416

AC02-79CH10003
National Telecommunications and Information Administration, Boulder. Co. Inst. for Telecommunication Sciences.
DOE/ER/10003-T2 1383

AC02-79CS30122
Colorado State Univ., Fort Collins. Solar Energy Applications Lab.
DOE/CS/30122-4 1379

AC02-79ET15613
Babcock and Wilcox Co., Alliance, OH. Alliance Research Center.
DOE/ET/15613-T1 1364

AC02-79ET27026
Radian Corp., Austin, TX.
DOE/ET/27026-T4 1330

AC02-79ET53087
United Technologies Research Center, East Hartford, CT.
DOE/ET/53087-2 1448

AC02-79EV10100
American Cancer Research Center and Hospital, Lakewood, CO. Dept. of Basic Oncology.
DOE/EV/10100-02 1328

AC02-79EV10305
Colorado State Univ., Fort Collins. Dept. of Radiology and Radiation Biology.
DOE/EV/10305-1 1426

AC02-80CS30254
Texas Univ. at Austin. School of Architecture.
DOE/CS/30254-1 1357

AC02-80EV10360
Chicago Univ., IL.
DOE/EV/10360-1 1326

AC02-ET11292
Thermo Electron Corp., Waltham, MA.
COO-3056-56 1364

AC03-76SF00012
California Univ., Los Angeles. Lab. of Nuclear Medicine and Radiation Biology.
UCLA-12-1253 1322

AC03-76SF0051
California Univ., Berkeley. Lawrence Berkeley Lab.
LBL-10301 1441

AC03-76SF00515
Stanford Linear Accelerator Center, CA.
SLAC-PUB-2593 1446
SLAC-PUB-2595 1446
SLAC-PUB-2605 1446
SLAC-PUB-2619 1447
SLAC-PUB-2621 1441
SLAC-224 1447
SLAC-229 1441
Stanford Univ., CA.
SLAC-PUB-2594 1446

AC03-80ER53092
JAYCOR, Del Mar, CA.
DOE/ER/53092-T1 1415
DOE/ER/53092-T2 1415
DOE/ER/53092-T3 1415

AC04-76DP00613
Bendix Corp., Kansas City, MO.
BDX-613-2510 1373

AC04-76DP00656
General Electric Co., St. Petersburg, FL. Neutron Devices Dept.
GEPP-TIS-534 1357

AC04-76DP00789
Sandia Labs., Albuquerque, NM.
SAND-80-1599C 1425
Sandia National Labs., Albuquerque, NM.
SAND-79-1944 1418
SAND-79-2468 1425
SAND-79-8756 1456
SAND-80-0445 1421
SAND-80-0834C 1348
SAND-80-0881 1369
SAND-80-1121 1372
SAND-80-1944C 1421
SAND-80-1945C 1372
SAND-80-1954C 1388
SAND-80-2148C 1327
TRC Environmental Consultants, Inc., Wethersfield, CT.
SAND-80-7121 1425
Wisconsin Univ.-Madison. Dept. of Physics.
SLAC-PUB-2596 1446

AC04-76DP03533
Rockwell International, Palo Alto, CA. Energy Systems Group.
RFP-3010 1398

AC04-78CS35356
Monsanto Research Corp., Dayton, OH. Dayton Lab.
ALO-35356-2 1379

AC04-79ET23009
Southern Methodist Univ., Dallas, TX.
DOE/ET/23009-T10 1365
DOE/ET/23009-T11 1365

AC05-76ET20372
West Virginia Univ., Morgantown. Dept. of Aerospace Engineering.
ORO-5135-77/7 1362

AC05-79ER10087
Thermacore, Inc., Lancaster, PA.
DOE/ER/10087-T2 1415

AC06-76ER01388
Max-Planck-Inst. fuer Kernphysik, Heidelberg (Germany, F.R.).
DOE/ER/01388-452 1443
Washington Univ., Seattle.
DOE/ER/01388-457 1441
Washington Univ., Seattle. Dept. of Physics.
DOE/ER/01388-454 1443
Washington Univ., St. Louis, MO.
RLO-1388-821 1446

AC06-76RL0830
Battelle Pacific Northwest Labs., Richland, WA.
BN-SA-1064 1379
EPRI-NP-1509 1427
PNL-2720 1418
PNL-3344 1372
PNL-3439 1348

AC06-76RL01857
UNC Nuclear Industries, Inc., Richland, WA.
UNI-TR-4 1398

AC06-77ET20280
Science Applications, Inc., La Jolla, CA.
DOE/ET/20280-3 1365

AC06-77RL01030
Atomics International Div., Richland, WA. Rockwell Hanford Operations.
RHO-CD-34-4Q 1425
RHO-CD-79-34-4Q 1425
Woodward-Clyde Consultants, San Francisco, CA.
RHO-BWI-C-66 1425

AC07-76ID01570
EG and G Idaho, Inc., Idaho Falls.
CONF-801102-1 1427
CONF-801107-1 1427
EGG-2056 1427
Idaho National Engineering Lab., Idaho Falls.
CONF-800971-1 1422
CONF-800971-2 1427
CONF-801102-12 1427
EGG-FM-5241 1424

AC07-79ID01675
Exxon Nuclear Idaho Co., Inc., Idaho Falls.
CONF-800987-1 1423
ENICO-1043 1424
ENICO-1044 1424
ENICO-1054 1396
ENICO-1060 1424
ENICO-1061 1420

AC07-79ID12079
Utah Univ. Research Inst., Salt Lake City. Earth Science Lab.
DOE/ID/12079-8 1343
DOE/ID/12079-15 1342

AC08-77ET28460
Gruy Federal, Inc., Houston, TX.
DOE/ET/28460-5 1345

AC08-79DP40096
Hoya Corp., Tokyo (Japan).
DOE/DP/40096-1 1440

AC09-76SR00001
Du Pont de Nemours (E.I.) and Co., Aiken, SC. Savannah River Lab.
DP-MS-80-6 1429
DP-MS-80-50 1423
DP-1552 1426
DP-1566 1426

AC11-76PN00014
Bettis Atomic Power Lab., West Mifflin, PA.
WAPD-TM-1468 1430

AC13-76GJ01664
Bendix Field Engineering Corp., Grand Junction, CO.
GJBX-114(80) 1346
GJBX-177(80) 1346
Du Pont de Nemours (E.I.) and Co., Aiken, SC. Savannah River Lab.
GJBX-198(80) 1346
EG and G GeoMetrics, Sunnyvale, CA.
GJBX-178(80) 1346
GJBX-200(80) 1346
GJBX-202(80) 1346
GJBX-203(80) 1346
GJBX-204(80) 1347
GJBX-212(80) 1347
GJBX-212(80)(V.2)(AREA1) 1347
GJBX-212(80)(V.2)(AREA2) 1347
GJBX-212(80)(V.2)(AREA3) 1347
GJBX-212(80)(V.2)(AREA4) 1347
GJBX-212(80)(V.2)(AREA5) 1347
INCO, Inc., McLean, VA.
GJBX-168(80) 1346

AC14-76FF02170
Hanford Engineering Development Lab., Richland, WA.
HEDL-SA-1933 1428
HEDL-SA-1955 1428
HEDL-SA-1992-FP 1428
HEDL-SA-1994-FP 1428
HEDL-SA-2006-FP 1429
HEDL-SA-2174 1429
HEDL-SA-2227-FP 1444
HEDL-TME-79-20 1424

AC19-79BC10083
Houston Univ., TX.
DOE/BC/10083-1 1344
DOE/BC/10083-7 1344
DOE/BC/10083-8 1344
DOE/BC/10083-9 1344

AC20-79LC10020
Colorado School of Mines, Golden.
DOE/LC/10020-T4 1454

AC21-76ET10379
Exxon Research and Engineering Co., Florham Park, NJ. Engineering and Technology Dept.
DOE/ET/10379-T3 1453

AC21-79MC10641
Intercomp Resource Development and Engineering, Inc., Houston, TX.
DOE/MC/10641-T1 1345

AC22-79ET13395
Colorado School of Mines, Golden.
DOE/ET/13395-1/2 1453
DOE/ET/13395-3/4 1453
DOE/ET/13395-5 1453
Colorado School of Mines, Golden. Dept. of Chemical and Petroleum Refining Engineering.
DOE/ET/13395-6 1453

AF 30(602)-3554
Radiation Inc Melbourne Fla
AD-482 913/1 1413
AD-482 920/6 1413

AFOSR-75-2754
Stevens Inst. of Tech., Hoboken, NJ. Dept. of Physics and Engineering Physics.
AD-A091 991/0 1447

AFOSR-76-2893
Wisconsin Univ.-Milwaukee. Dept. of Physics.
AD-A092 387/0 1450

AFOSR-76-2903
Michigan Univ., Ann Arbor. Computer, Information and Control Engineering.

AD-A091 989/4 1378

AFOSR-76-2923
Northwestern Univ., Evanston, IL. Dept. of Mechanical Engineering.
AD-A092 389/6 1377

AFOSR-76-3050
Illinois Univ. at Chicago Circle. Dept. of Mathematics.
AD-A092 190/8 1376
Indiana Univ. at Bloomington. Dept. of Mathematics.
AD-A092 185/8 1376

AFOSR-76-3056
Massachusetts Inst. of Tech., Cambridge. Dept. of Chemistry.
AD-A092 189/0 1333

AFOSR-76-3063
Brown Univ., Providence, RI. Div. of Applied Mathematics.
AD-A092 187/4 1376
AD-A092 188/2 1376

AFOSR-76-3083
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
AD-A091 877/1 1358

AFOSR-76-3092
Brown Univ., Providence, RI. Lefschetz Center for Dynamical Systems.
AD-A091 975/3 1375
AD-A092 184/1 1376

AFOSR-77-3174
Rhode Island Univ., Kingston. Dept. of Mathematics.
AD-A091 987/8 1358

AFOSR-77-3175
Illinois Univ. at Urbana-Champaign.
AD-A092 186/6 1369

AFOSR-77-3186
Chicago Univ., IL. James Franck Inst.
AD-A092 183/3 1333

AFOSR-77-3271
Maryland Univ., College Park. Computer Vision Lab.
AD-A092 075/1 1354

AFOSR-77-3365
Texas Tech Univ., Lubbock. Laser Lab.
AD-A092 482/9 1437

AFOSR-78-3519
Kentucky Univ., Lexington. Dept. of Mathematics.
AD-A092 388/8 1377

AFOSR-78-3581
Purdue Univ., Lafayette, IN. School of Electrical Engineering.
AD-A092 182/5 1355

AFOSR-79-0016
Auburn Univ., AL. Dept. of Industrial Engineering.
AD-A092 250/0 1296

AFOSR-79-0129
Ohio State Univ. Research Foundation, Columbus.
AD-A092 249/2 1328

AI01-77DP40042
Naval Research Lab., Washington, DC.
NRL-MR-4319 1417
NRL-MR-4350 1417
NRL-MR-4353 1448
NRL-MR-4356 1417

AI01-78ET11417
Arnold Engineering Development Center, Arnold AFS, TN.
FE-2895-8 1366

AI01-79ER10035
National Aeronautics and Space Administration, Moffett Field, CA. Ames Research Center.
DOE/ER/10035-01 1383

AI01-79ET20305
Power Technologies, Inc., Schenectady, NY.
DOE/NASA/0134-1 1365

AID/CSD-2455
Rhode Island Univ., Kingston. Dept. of Sociology and Anthropology.
PB81-125775 1291

AID/TA-C-1433
National Research Council, Washington, DC. Board on Science and Technology for International Development.
PB81-129975 1323

AM01-76EI02295
Massachusetts Inst. of Tech., Cambridge. Energy Lab.
MIT-EL-80-001 1371

AM02-76CH03073
Princeton Univ., NJ. Plasma Physics Lab.
PPPL-1695 1418
PPPL-1697 1418
PPPL-1707 1418
PPPL-1709 1418
PPPL-1710 1434
PPPL-1712 1418
PPPL-1713 1418
PPPL-1715 1448
PPPL-1718 1418
PPPL-1719 1418

ARPA ORDER-1057
Avco-Everett Research Lab., Inc., Everett, MA.
AD-907 560/7 1294

ARPA ORDER-1783
Arctic Inst. of North America, Arlington, VA.
AD-A092 476/1 1349

ARPA ORDER-2124
Physical Dynamics Inc Detroit Mich
AD-910 973/7 1409

ARPA ORDER-2504
SRI International, Arlington, VA.
AD-A092 212/0 1439

ARPA ORDER-3491
Bolt Beranek and Newman, Inc., Cambridge, MA.
AD-A092 065/2 1407

ARPA ORDER-3673
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
AD-A092 113/0 1408

ARPA ORDER-3709
Stanford Univ., CA. Integrated Circuits Lab.
AD-A091 969/6 1351

ARPA ORDER-3767
California Univ., San Diego, La Jolla. Center for Human Information Processing.
AD-A091 925/8 1308
AD-A092 233/6 1308

ARPA ORDER-3800
Spire Corp., Bedford, MA.
AD-A091 983/7 1450

ARPA ORDER-3829
Computer Systems Management, Inc., Arlington, VA.
AD-A092 293/0 1356

AS02-76ER01763
Ohio State Univ., Columbus.
DOE/ER/01763-T1 1336

AS02-76ER02009
Indiana Univ. at Bloomington. Dept. of Physics.
DOE/ER/02009-139 1443
DOE/ER/02009-140 1443

AS02-76ER02383
Illinois Univ. at Urbana-Champaign. Dept. of Computer Science.
COO-2383-0070 1357

AS02-76ER02490
Ohio Univ., Athens.
DOE/ER/02490-1 1443

AS02-76ER03158
Cornell Univ., Ithaca, NY. Dept. of Materials Science and Engineering.
DOE/ER/03158-73 1336

AS02-76ER03235
Brown Univ., Providence, RI. Dept. of Chemistry.
DOE/ER/03235-1 1444

AS02-76ER03539
Temple Univ., Philadelphia, PA. Dept. of Physics.
COO-3539-13 1422

AS02-76ET52040
Illinois Univ. at Urbana-Champaign. Fusion Studies Lab.
COO-2218-182 1415

AS02-76ET53004
Rensselaer Polytechnic Inst., Troy, NY. Plasma Dynamics Lab.
DOE/ET/53004-2 1447

AS02-76ET53051
Wisconsin Univ.-Madison.
DOE/ET/53051-8 1416
DOE/ET/53051-9 1447
DOE/ET/53051-10 1447
DOE/ET/53051-113 1447

AS02-76EV01300
Wisconsin Univ.-Madison.
DOE/EV/01300-45 1316

AS02-76EV01515
Wisconsin Univ.-Madison. Dept. of Soil Science.
DOE/EV/01515-84 1426

AS02-76EV02003
Michigan Univ., Ann Arbor. Great Lakes Research Div.
COO-2003-36 1322

AS02-76EV02185
Columbia Univ., New York.
COO-2185-13 1383

AS02-77ER04445
Illinois Inst. of Tech., Chicago. Dept. of Chemical Engineering.
DOE/ER/04445-T1 1336

AS02-77ER14529
Michigan State Univ., East Lansing. Dept. of Physics.
DOE/ER/14529-1 1422

AS02-77EV04159
Sloan-Kettering Inst. for Cancer Research, New York.
COO-4159-6 1316

AS02-78ER05002
Massachusetts Inst. of Tech., Cambridge.
DOE/ER/05002-13 1370
DOE/ER/05002-14 1370

AS02-78ER05031
Amherst Coll., MA.
DOE/ER/05031-2 1336

AS02-78PC04717
Texas A and M Univ., College Station.
DOE/PC/04717-5 1331

AS05-76ER03992
Tel-Aviv Univ. (Israel). Dept. of Physics and Astronomy.
DOE/ER/03992-422 1444
Texas Univ. at Austin. Center for Particle Theory.
DOE/ER/03992-402 1444
DOE/ER/03992-412 1444
DOE/ER/03992-413 1444
DOE/ER/03992-414 1444
DOE/ER/03992-417 1448

AS05-78ET10182
Alabama Univ., University.
DOE/ET/10182-T1 1345
DOE/ET/10182-T2 1345
DOE/ET/10182-T3 1345
DOE/ET/10182-T4 1345
DOE/ET/10182-T5 1345
DOE/ET/10182-T6 1345
DOE/ET/10182-T7 1345

AS06-78ET20560
Pennsylvania State Univ., University Park. Dept. of Meteorology.
DOE/ET/20560-1 1362

AS19-79BC10007
Carnegie-Mellon Univ., Pittsburgh, PA.
DOE/BC/10007-8 1344

AS20-79LC01761
Department of Energy, Laramie, WY. Laramie Energy Technology Center.
DOE/LETC/TPR-80-1761 1345

AS02-77ET10460
Notre Dame Univ., IN. Dept. of Metallurgical Engineering and Materials Science.
DOE/ET/10460-14 1370

AT03-76ER70296
California Univ., Berkeley. Coll. of Engineering.
UCB/EERC-80/21 1422

AT03-76ET33004
General Atomic Co., San Diego, CA.
DOE/ET/33004-T1 1431

AT03-76ET35300
General Atomic Co., San Diego, CA.
GA-A-15685 1427
GA-A-15929 1367

AT03-76ET51011
General Atomic Co., San Diego, CA.
GA-A-15974 1416
GA-A-16013 1416
GA-A-16071 1393
GA-A-16072 1416
GA-A-16089 1416

AT03-76SF70030
General Electric Co., San Jose, CA. Advanced Reactor Systems Dept.
GEFR-SP-222 1429

AT03-76SF71023
General Atomic Co., San Diego, CA.
GA-A-15894 1428
GA-A-15900 1428

AT03-76SF71061
General Atomic Co., San Diego, CA.
GA-A-16052 1428

AT06-76ER71001
Montana Univ., Missoula.
DOE/ER/71001-8 1444

AT06-76ET53081
Washington Univ., Seattle. Fusion Plasma Program.

CONTRACT/GRANT NUMBER INDEX

DOE/ET/53081-1 1448

AT06-76EV70031
Oregon State Univ., Corvallis. Air Resources Center.
DOE/EV/70031-5 1383

AT06-79EV10256
Alaska Agricultural Experiment Station, Palmer.
DOE/EV/10256-1 1345

AT21-79MC11284
West Virginia Univ., Morgantown. Dept. of Anatomy.
DOE/MC/11284-T2 1328

DA-ERO-78-G-103
Technische Hochschule, Darmstadt (Germany, F.R.). Inst. fuer Hochfrequenztechnik.
AD-A092 354/0 1450

DA-30-115-ORD-739
Cornell Aeronautical Lab., Inc., Buffalo, NY.
AD-A950 100/8 1413

DA-44-188-ARO-2
Human Resources Research Organization, Alexandria, VA.
AD-A950 103/2 1434
AD-A950 104/0 1434
AD-A950 105/7 1434
AD-A950 106/5 1436
AD-A950 107/3 1434
AD-A950 108/1 1434
AD-A950 109/9 1434

DAAA15-70-C-0193
Brunswick Corp Lincoln Nebr Technical Products Div
AD-885 837/5 1399

DAAA15-77-C-0008
Springborn Labs., Inc., Enfield, CT.
AD-A092 380/5 1326

DAAB07-76-C-8085
Signatron, Inc., Lexington, MA.
AD-A092 030/6 1407

DAAD05-70-C-0170
Southwest Research Inst., San Antonio, TX.
AD-885 260/0 1436

DAAG29-75-C-0024
Wisconsin Univ.-Madison. Mathematics Research Center.
AD-A092 248/4 1376

DAAG29-75-G-0113
North Carolina State Univ. at Raleigh. Engineering Research Services Div.
AD-A092 496/9 1367

DAAG29-75-G-0192
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
AD-A092 124/7 1359

DAAG29-76-C-0044
Massachusetts Inst. of Tech., Cambridge. Dept. of Materials Science and Engineering.
AD-A092 241/9 1373

DAAG29-76-D-0100
Battelle Columbus Labs., OH.
AD-A092 344/1 1435
AD-A092 503/2 1294

DAAG29-76-G-0111
South Carolina Univ., Columbia. Coastal Research Div.
AD-A091 913/4 1341
AD-A092 115/5 1341

DAAG29-76-G-0200
Illinois Univ. at Urbana-Champaign. Mechanical Engineering Lab.
AD-A091 924/1 1454

DAAG29-76-G-0257
California Univ., Berkeley. Earthquake Engineering Research Center.
AD-A092 352/4 1350

DAAG29-76-G-0296
Alaska Univ., Fairbanks. Inst. of Arctic Biology.
AD-A092 116/3 1316

DAAG29-76-G-0324
Colorado State Univ., Fort Collins. Dept. of Electrical Engineering.
AD-A092 489/4 1356

DAAG29-76-G-0326
Virginia Univ., Charlottesville. Dept. of Chemistry.
AD-A092 497/7 1335

DAAG29-77-C-0009
Virginia Univ., Charlottesville. Dept. of Mechanical and Aerospace Engineering.
AD-A091 905/0 1454

DAAG29-77-C-0133
Colorado State Univ., Fort Collins. Dept. of Chemistry.
AD-A092 338/3 1334

DAAG29-77-G-0004
Wisconsin Univ.-Madison. Dept. of Mathematics.
AD-A092 495/1 1377

DAAG29-77-G-0092
California Inst. of Tech., Pasadena. Arthur Amos Noyes Lab. of Chemical Physics.
AD-A092 117/1 1373

DAAG29-77-G-0116
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
AD-A091 917/5 1449
AD-A092 088/4 1450

DAAG29-77-G-0132
California Univ., Berkeley. Electronics Research Lab.
AD-A091 902/7 1358

DAAG29-77-G-0133
Colorado State Univ., Fort Collins. Dept. of Chemistry.
AD-A092 119/7 1333
AD-A092 332/6 1334
AD-A092 333/4 1334
AD-A092 334/2 1334
AD-A092 335/9 1334
AD-A092 336/7 1334
AD-A092 337/5 1334

DAAG29-77-G-0143
Houston Univ., TX. Dept. of Electrical Engineering.
AD-A092 176/7 1376

DAAG29-78-G-0065
Rensselaer Polytechnic Inst., Troy, NY. Dept. of Physics.
AD-A092 118/9 1333

DAAG29-78-G-0092
Purdue Univ., Lafayette, IN. Combustion Lab.
AD-A092 255/9 1455

DAAG29-78-G-0102
Notre Dame Univ., IN.
AD-A092 494/4 1438

DAAG29-78-G-0141
Rensselaer Polytechnic Inst., Troy, NY. Dept. of Materials Engineering.
AD-A092 492/8 1367
AD-A092 493/6 1367

DAAG29-78-G-0145
Texas Univ. at Austin. Dept. of Electrical Engineering.
AD-A092 120/5 1351

DAAG29-78-G-0182
Wayne State Univ., Detroit, MI.
AD-A092 490/2 1396

DAAG29-78-G-0188
Colorado Univ. at Boulder.
AD-A091 904/3 1359

DAAG29-79-C-0024
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
AD-A092 122/1 1408
AD-A092 123/9 1358
AD-A092 124/7 1359
AD-A092 131/2 1359

DAAG29-79-C-0062
George Washington Univ., Washington, DC. Inst for Management Science and Engineering.
AD-A092 254/2 1376

DAAG29-79-C-0077
Massachusetts Inst. of Tech., Cambridge. Dept. of Materials Science and Engineering.
AD-A092 251/8 1367

DAAG29-79-C-0079
Columbia Radiation Lab. New York.
AD-A092 506/5 1335

DAAG29-79-C-0151
Wayne State Univ., Detroit, MI.
AD-A092 490/2 1396

DAAG29-79-C-0161
Brown Univ., Providence, RI. Lefschetz Center for Dynamical Systems.
AD-A091 975/3 1375
AD-A092 184/1 1376

DAAG29-79-C-0169
Purdue Univ., Lafayette, IN. Combustion Lab.
AD-A092 255/9 1455

DAAG29-79-C-0171
California Univ., Berkeley. Electronics Research Lab.
AD-A092 055/3 1407

DAAG29-79-C-0178
Houston Univ., TX. Dept. of Electrical Engineering.
AD-A092 176/7 1376

DAAG29-79-C-0181
Stanford Univ., CA. Edward L. Ginzton Lab. of Physics.
AD-A092 121/3 1294

DAAG29-79-C-0184
Illinois Univ. at Urbana-Champaign. Mechanical Engineering Lab.
AD-A091 924/1 1454

DAAG29-80-C-0041
Wisconsin Univ.-Madison. Mathematics Research Center.
AD-A092 248/4 1376

DAAG29-80-G-0101
Virginia Univ., Charlottesville. Dept. of Chemistry.
AD-A092 497/7 1335

DAAG39-77-C-0055
IBM Federal Systems Div., Arlington, VA.
AD-A092 066/0 1402
AD-A092 067/8 1354

DAAG39-77-M-0487
General Research Corp., McLean, VA. Operations Analysis Div.
AD-A092 147/8 1288

DAAG46-77-C-0057
Pratt and Whitney Aircraft Group, West Palm Beach, FL. Government Products Div.
AD-A092 245/0 1368

DAAG53-76-C-0138
Maryland Univ., College Park. Computer Science Center.
AD-A091 994/4 1354
AD-A092 153/6 1355
Maryland Univ., College Park. Computer Vision Lab.
AD-A091 993/6 1354
AD-A091 995/1 1354
AD-A091 996/9 1354

DAAH01-80-M-0399
Control Dynamics Co., Huntsville, AL.
AD-A092 015/7 1400

DAAK10-79-C-0246
Hercules, Inc., Cumberland, MD. Allegany Ballistics Lab.
AD-A092 416/7 1432

DAAK11-78-C-0102
Martin Marietta Aerospace, Denver, CO. Denver Div.
AD-A092 070/2 1297

DAAK30-78-C-0080
Grumman Aerospace Corp., Bethpage, NY. Research Dept.
AD-A092 277/3 1434

DAAK40-79-D-0018
M and S Computing, Inc., Huntsville, AL.
AD-B041 709/7 1413

DAAK60-77-C-0071
Uniroyal, Inc., Naugatuck, CT. Consumer Products Div.
AD-A091 881/3 1400

DAAK70-77-C-0142
George Washington Univ., Washington, DC. Dept of Electrical Engineering and Computer Science.
AD-A092 017/3 1452

DAAK70-78-C-0114
SRI International, Menlo Park, CA.
AD-A092 146/0 1355

DAAK70-78-C-0120
RCA Corp., Lancaster, PA. SSD-Electro-Optics and Devices.
AD-A092 078/5 1351

DAAK70-78-C-0121
Kansas Univ./Center for Research, Inc., Lawrence. Remote Sensing Lab.
AD-A092 077/7 1412

DAAK70-78-C-0186
Data Signal Corp., Watertown, MA.
AD-A091 929/0 1378

DAAK70-79-C-0009
General Electric Co., Lanham, MD. Space Div.
AD-A091 959/7 1354

DAAK70-79-C-0019
RCA Corp., Lancaster, PA. SSD-Electro-Optics and Devices.
AD-A092 079/3 1351

DAAK70-79-C-0221
Goodyear Aerospace Corp., Akron, OH.
AD-A091 928/2 1353

DACW39-79-M-4486
Barron (Reginald A.), Guilford, CT.
AD-A092 014/0 1350

DACW51-79-C-0001
New York State Dept. of Environmental Conservation, Albany.
AD-A092 036/3 1380
AD-A092 037/1 1380
AD-A092 038/9 1381
AD-A092 039/7 1381
AD-A092 040/5 1381
AD-A092 042/1 1381

AD-A092 170/0 1381
AD-A092 219/5 1381
AD-A092 220/3 1382
AD-A092 225/2 1382
AD-A092 227/8 1382
AD-A092 296/3 1382
AD-A092 452/2 1382

DACW61-80-D-0013
O'Brien and Gere Engineers, Inc., Philadelphia, PA.
AD-A092 218/7 1381

DAHC04-75-G-0192
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
AD-A092 131/2 1359

DAHC15-73-C-0200
Institute for Defense Analyses, Arlington, VA. Program Analysis Div.
AD-B033 848/3 1400

DAHC19-78-C-0027
Vector Research, Inc., Ann Arbor, MI.
AD-A092 205/4 1408
AD-A092 206/2 1408
AD-A092 207/0 1403
AD-A092 208/8 1408

DAMD17-79-C-9107
Science Applications, Inc., McLean, VA.
AD-A092 155/1 1309
AD-A092 203/9 1309

DARPA ORDER-2551
Teledyne Geotech, Alexandria, VA. Seismic Data Analysis Center.
AD-A091 910/0 1353
AD-A091 911/8 1349
AD-A091 984/5 1349

DARPA ORDER-3206
Maryland Univ., College Park. Computer Vision Lab.
AD-A091 993/6 1354
AD-A091 995/1 1354
AD-A091 996/9 1354

DCA100-77-C-0054
GTE Sylvania, Inc., Needham Heights, MA. Electronic Systems Group-Eastern Div.
AD-A092 171/8 1408
AD-A092 172/6 1408

DCA100-79-C-0038
GTE Sylvania, Inc., Needham Heights, MA. Communications Systems Div.
AD-A092 010/8 1407

DCA100-79-C-0050
Delta Information Systems, Inc., Jenkintown, PA.
AD-A092 272/4 1408

DCA100-80-M-0145
Delta Information Systems, Inc., Jenkintown, PA.
AD-A092 395/3 1408

DCPA01-78-C-0220
SYSTAN, Inc., Los Altos, CA.
AD-A092 056/1 1400
AD-A092 164/3 1400

DE-AC02-76CH00016
Brookhaven National Lab., Upton, NY.
NUREG/CR-1694 1424

DHEW-HCFA-500-78-0019
Abt Associates, Inc., Cambridge, MA.
PB81-124687 1320

DHEW/HCFA-600-77-0051
Colorado Univ. Health Sciences Center, Denver.
PB81-132334 1321

DI-14-31-0001-3104
Nevada Univ. System, Reno. Water Resources Center.
PB81-127276 1343

DI-14-31-0001-3612
Nevada Univ. System, Reno. Water Resources Center.
PB81-127276 1343

DI-14-34-0001-0138
Oklahoma Water Resources Research Inst., Stillwater.
PB81-124158 1384

DI-14-34-0001-0142
Rhode Island Univ., Kingston. Dept. of Civil and Ocean Engineering.
PB81-127409 1385

DI-14-34-0001-7164
Minnesota Univ., Minneapolis. Limnological Research Center.
PB81-124141 1343

DI-14-34-0001-7187
South Dakota State Univ., Brookings. Water Resources Inst.
PB81-127342 1291

DI-14-34-0001-8036
Oklahoma State Univ., Stillwater. Dept. of Agricultural Engineering.
PB81-127557 1291

DI-14-34-0001-8403
Lewis and Clark Coll., Portland, OR. Natural Resources Law Inst.
PB81-138125 1387
PB81-138133 1387
PB81-138158 1387
PB81-138166 1387

Washington State Univ., Pullman. Dept. of Political Science.
PB81-138141 1387

DI-14-34-0001-9022
Maryland Univ., College Park. Water Resources Research Center.
PB81-127532 1329

DI-14-34-0001-9042
Rhode Island Univ., Kingston.
PB81-127417 1385

DI-14-34-0001-9047
Utah Water Research Lab., Logan.
PB81-127383 1344

DI-14-34-0001-9504
Midwest Research Inst., Kansas City, MO.
PB81-127326 1385

DI-08550-CT5-17
Texas Univ. at Austin, Port Aransas. Marine Science Inst.
PB81-137689 1340

DL-J-9-F-8-0137
National Materials Advisory Board (NRC), Washington, DC.
PB81-123549 1291

DL-J-9-M-9-0195
Cornell Univ., Ithaca, NY.
PB81-132243 1300

DL-J-9-M-9-0199
Pennsylvania Univ., Philadelphia.
PB81-126732 1307

DL-J-9-P-7-0149
Case Western Reserve Univ., Cleveland, OH.
PB81-130718 1307

DL-20-06-78-07
Urban and Rural Systems Associates, San Francisco, CA.
PB81-125619 1303
PB81-126039 1300
PB81-126047 1300

DNA001-74-C-0222
California Research and Technology, Inc., Woodland Hills.
AD-B006 844/5 1350

DNA001-77-C-0035
Weidlinger Associates, New York.
AD-A092 274/0 1342

DNA001-78-C-0374
Kaman AviDyne, Burlington, MA.
AD-A092 143/7 1421

DNA001-79-C-0099
Systems, Science and Software, La Jolla, CA.
AD-A092 214/6 1421

DNA001-79-C-0153
SRI International, Menlo Park, CA.
AD-A091 980/3 1293

DNA001-79-C-0155
Calspan Advanced Technology Center, Buffalo, NY.
AD-A092 229/4 1454

DNA001-79-C-0224
Kaman AviDyne, Burlington, MA.
AD-A091 978/7 1435

DNA001-79-C-0351
BDM Corp., Vienna, VA.
AD-A092 154/4 1403

DNA001-79-C-0455
General Electric Co., Santa Barbara, CA. TEMPO.
AD-B951 703/8 1421
AD-B951 735/0 1421
AD-B951 736/8 1426
AD-B951 739/2 1402
AD-B951 740/0 1327
AD-B951 741/8 1327
AD-B951 742/6 1421

DOE-DE-A108-79DP40092
Naval Research Lab., Washington, DC.
AD-A092 471/2 1414

DOS-1751-900429
New York Univ., NY. Center for Science and Technology Policy.
AD-A092 442/3 1297

DOT-CG-617775-A
CASDE Corp., Torrance, CA.
AD-A091 986/0 1323

DOT-D-5-15
California State Dept. of Transportation, Sacramento. Office of Transportation Lab.
PB81-129835 1367

DOT-F-5-15
California State Dept. of Transportation, Sacramento. Office of Transportation Lab.
PB81-132995 1386

DOT-FA77WA-3961
Peat, Marwick, Mitchell and Co., San Francisco, CA.
AD-A092 455/5 1290
AD-A092 456/3 1291

DOT-FA78WA-4105
Bolt Beranek and Newman, Inc., Cambridge, MA.
AD-A092 228/6 1290

DOT-FA78WAI-877
National Oceanic and Atmospheric Administration, Boulder, CO. Environmental Research Labs.
AD-A092 276/5 1412

DOT-FR-74300
Research Group International, Charlottesville, VA.
PB81-124521 1300

DOT-HS-8-01944
Michigan Univ., Ann Arbor. Highway Safety Research Inst.
PB81-124679 1394

DOT-MA-06-0051
Transportation Systems Center, Cambridge, MA.
PB81-124869 1389

DOT-UT-80037
Chase, Rosen and Wallace, Inc., Alexandria, VA.
PB81-120172 1388

DSA900-77-C-3840
Tactical Weapon Guidance and Control Information and Analysis Center, Chicago IL.
AD-A092 478/7 1396

EDA-ERD-699-G-79-33
Northeast-Midwest Inst., Washington, DC.
PB81-125544 1300
PB81-129801 1386

EDA-05-06-01854
Southern Colorado Economic Development District, Pueblo.
PB81-130965 1388

EDA-99-7-13507
Northeast-Midwest Inst., Washington, DC.
PB81-129801 1386

EMW-C-0365
Coastal Area Planning and Development Commission, Brunswick, GA.
AD-A092 173/4 1309

EPA-C-06-1042-011
Los Angeles-Orange County Metropolitan Area Project, Whittier, CA.
PB81-132151 1386

EPA-R-80477
Georgia State Univ., Atlanta. Dept. of Biology.
PB81-126567 1324

EPA-R-080614-30-10
Florida State Univ., Tallahassee. Dept. of Biological Science.
PB81-126591 1316

EPA-R803510-0
Hadassah Medical School, Jerusalem (Israel). Environmental Health Lab.
AD-A092 252/6 1318

EPA-R-803838
Environmental Research Lab., Gulf Breeze, FL.
PB81-122749 1329

EPA-R-803931
Boulder, CO.
PB81-129124 1386

EPA-R-804527
University of Southern Mississippi, Hattiesburg.
PB81-129546 1317

EPA-R-804977-01
British Columbia Research Council, Vancouver.
PB81-126369 1339

EPA-R-805014
Virginia Commonwealth Univ., Richmond.
PB81-126450 1322

EPA-R-805419
Oklahoma State Univ., Stillwater. Dept. of Chemistry.
PB81-125015 1332

CONTRACT/GRANT NUMBER INDEX

EPA-R-806278
Colorado State Univ., Fort Collins. Dept. of Agricultural and Chemical Engineering.
PB81-129017 1386

EPA-R-806334-00-10
Florida State Univ., Tallahassee. Dept. of Chemistry.
PB81-125676 1322

EPA-68-02-1219
Little (Arthur D.), Inc., Cambridge, MA.
PB81-121154 1383

EPA-68-02-1480
Southern Research Inst., Birmingham, AL.
PB81-122723 1384

EPA-68-02-2181
Southern Research Inst., Birmingham, AL.
PB81-122723 1384

EPA-68-02-2610
Southern Research Inst., Birmingham, AL.
PB81-122715 1338

EPA-68-02-3177
Midwest Research Inst., Kansas City, MO.
PB81-125825 1299

EPA-68-03-2591
Northrop Services, Inc., Las Vegas, NV.
AD-A092 165/0 1381

EPA-68-03-2636
Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV. Remote Sensing Lab.
PB81-129009 1385

EPA-68-03-2829
Hamilton Test Systems, Inc., Phoenix, AZ.
PB81-123499 1389

EQ10AC018
Science Research Systems, Inc., Ruston, LA.
PB81-128167 1329

ET-77-C-01-9125
Department of Energy, Washington, DC.
PAT-APPL-6-107 792 1347

EY-76-C-02-2880
Carmel Energy, Inc., Houston, TX.
DOE/BETC-2880-1 1344

EY-76-S-04-5105
Department of Energy, Washington, DC.
PAT-APPL-6-110 738 1337

EY-77-C-21-8087
Department of Energy, Washington, DC.
PAT-APPL-6-100 663 1331

F04701-78-C-0014
Arete Associates, Inc., Santa Monica, CA.
AD-A091 971/2 1438

F04701-80-C-0009
Science Applications, Inc., El Segundo, CA.
AD-A091 953/0 1456

F04701-80-C-0081
Aerospace Corp., El Segundo, CA.
AD-A092 458/9 1457

Aerospace Corp., El Segundo, CA. Materials Sciences Lab.
AD-A092 273/2 1370

F08606-78-C-0007
Teledyne Geotech, Alexandria, VA. Seismic Data Analysis Center.
AD-A091 911/8 1349

F08606-79-C-0007
Teledyne Geotech, Alexandria, VA. Seismic Data Analysis Center.
AD-A091 984/5 1349

F08635-71-C-0090
Auburn Univ., AL. Dept. of Aerospace Engineering.
AD-B013 340/5 1438

F08635-74-C-0116
AAI Corp., Cockeysville, MD.
AD-B007 705/7 1432

F08635-75-C-0021
Coloney (Wayne H) CO Inc Tallahassee Fla
AD-B010 100/6 1432

F08635-75-C-0023
Auburn Univ., AL. Dept. of Aerospace Engineering.
AD-B013 340/5 1438

F08635-75-C-0044
Systems, Science and Software, La Jolla, CA.
AD-B015 193/6 1433

AD-B015 343/7 1435

AD-B015 344/5 1435

F08635-76-C-0167
General Electric Co., Philadelphia, PA. Space Div.
AD-B015 892/3 1352

F08635-76-C-0192
AAI Corp., Cockeysville, MD.
AD-B026 541/3 1433

F08635-76-C-0226
Booz-Allen Applied Research, Fort Walton Beach, FL.
AD-B027 872/1 1297

F19628-77-C-0001
MITRE Corp., McLean, VA. METREK Div.
AD-A092 029/8 1398

F19628-77-C-0087
Northeastern Univ., Boston, MA.
AD-A092 371/4 1411

F19628-78-C-0005
Emmanuel Coll., Boston, MA.
AD-A092 084/3 1293

F19628-78-C-0033
Oklahoma State Univ., Stillwater. Electronics Lab.
AD-A092 111/4 1359

F19628-78-C-0145
Aerodyne Research, Inc., Bedford, MA. Center for Chemical and Environmental Physics.
AD-A092 061/1 1333

F19628-78-C-0178
RCA Solid State Technology Center, Somerville, NJ.
AD-A091 952/2 1359

F19628-78-C-0215
Atmospheric and Environmental Research, Inc., Cambridge, MA.
AD-A092 504/0 1294

F19628-79-C-0031
Boston Coll., Chestnut Hill, MA. Space Data Analysis Lab.
AD-A092 446/4 1456

F19628-80-C-0002
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
AD-A091 927/4 1411

AD-A092 113/0 1408

AD-A092 128/8 1358

AD-A092 298/9 1358

F19628-80-C-0062
General Electric Co., Philadelphia, PA. Space Div.
AD-A091 955/5 1292

F29601-78-C-0056
Colorado School of Mines, Golden.
AD-A091 976/1 1380

AD-A092 012/4 1380

AD-A092 013/2 1380

F30602-68-C-0251
Southwest Research Inst., San Antonio, TX.
AD-500 169/8 1437

F30602-68-C-0257
Devenco Inc New York Research and Development Div
AD-503 039/0 1413

F30602-69-C-0050
Rca Government Communications Systems Div Camden N J
AD-892 041/5 1359

AD-892 042/3 1359

F30602-69-C-0206
Westinghouse Electric Corp Baltimore MD Electronic Systems Support Div
AD-885 551/2 1413

F30602-70-C-0202
Singer-General Precision Inc Sunnyvale Calif Link Div
AD-883 122/4 1399

F30602-70-C-0256
Bendix Research Labs Southfield Mich Digital Systems and Techniques Dept
AD-900 360/9 1341

F30602-70-C-0293
Devenco Inc New York Research and Development Div
AD-885 234/5 1413

F30602-71-C-0018
PRC Information Sciences Co., McLean, VA.
AD-893 139/6 1340

AD-893 140/4 1340

F30602-71-C-0031
Raytheon CO/Autometric Wayland Mass
AD-893 054/7 1340

F30602-71-C-0067
Avco-Everett Research Lab., Inc., Everett, MA.
AD-907 560/7 1294

F30602-71-C-0082
Bendix Research Labs., Southfield, MI.
AD-919 575/1 1399

F30602-71-C-0093
Radiation Inc Melbourne Fla
AD-888 625/1 1358

F30602-72-C-0002
General Electric Co., Utica, NY. Aerospace Electronic Systems Dept.
AD-903 700/3 1411

AD-903 701/1 1411

F30602-72-C-0495
Physical Dynamics Inc Detroit Mich
AD-910 973/7 1409

F30602-72-C-0504
Computer Sciences Corp., Falls Church, VA.
AD-B000 632/0 1409

F30602-73-C-0161
Abacus Programming Corp Santa Monica Calif
AD-923 431/1 1356

F30602-76-C-0385
Honeywell, Inc., St. Petersburg, FL.
AD-A092 200/5 1400

F30602-76-C-0412
Synectics, Corp., Rome, NY.
AD-A091 942/3 1348

F30602-77-C-0163
IIT Research Inst., Chicago, IL.
AD-A092 031/4 1452

F30602-78-C-0309
CNR, Inc., Needham, MA.
AD-A091 985/2 1410

F30602-79-C-0039
IIT Research Inst., Chicago, IL.
AD-A092 031/4 1452

AD-A092 032/2 1452

F30602-79-C-0068
Ohio State Univ., Columbus. ElectroScience Lab.
AD-A092 316/9 1359

F30602-79-C-0161
IIT Research Inst., Chicago, IL.
AD-A092 315/1 1440

F33600-79-C-0549
Teledyne Geotech, Alexandria, VA. Seismic Data Analysis Center.
AD-A091 910/0 1353

F33615-69-C-1272
Aeronautical Research Associates of Princeton, Inc., NJ.
AD-879 736/7 1289

F33615-69-C-1715
Philco-Ford Corp Palo Alto Calif Space and Re-Entry Systems Div
AD-871 914/8 1379

F33615-70-C-1126
Boeing Co., Renton, WA. Commercial Airplane Group.
AD-894 188/2 1438

F33615-70-C-1406
Stanford Research Inst., Menlo Park, CA.
AD-913 898/3 1457

F33615-70-C-1481
United Aircraft Research Labs East Hartford Conn
AD-919 850/8 1440

F33615-70-C-1654
General Dynamics, San Diego, CA. Convair Aerospace Div.
AD-886 531/3 1289

F33615-71-C-1024
Philips Labs., Briarcliff Manor, NY.
AD-891 461/6 1457

AD-902 944/8 1379

F33615-71-C-1310
Boeing Vertol Co., Philadelphia, PA.
AD-904 089/0 1289

AD-904 665/7 1438

AD-908 244/7 1289

F33615-71-C-1326
Systems Research Labs., Inc., Dayton, OH.
AD-912 392/8 1410

F33615-72-C-1034
Monsanto Research Corp., Dayton, OH. Dayton Lab.
AD-912 789/5 1360

AD-912 790/3 1360

AD-912 791/1 1360

AD-912 792/9 1360

F33615-72-C-1194
Rca Government and Commercial Systems Burlington Mass Aerospace Systems Div
AD-923 171/3 1352

F33615-72-C-1281
Little (Arthur D.), Inc., Cambridge, MA.
AD-907 360/2 1379

F33615-72-C-1585
Perkin-Elmer Corp., Norwalk, CT.
AD-919 567/8 1352

F33615-72-C-1728
Aleph Inc Garland Tex

AD-917 846/8 1360

F33615-72-C-1787
Analytic Sciences Corp., Reading, MA.
AD-921 863/7 1412

F33615-72-C-1921
Rockwell International, Thousand Oaks, CA. Science Center.
AD-918 930/9 1411

F33615-72-C-2071
ITT Aerospace/Optical Div., Fort Wayne, IN.
AD-B015 629/9 1352

F33615-72-C-2092
TRW, Inc., Lawndale, CA. Semiconductor Div.
AD-917 847/6 1352

F33615-72-C-2106
General Electric Co., Utica, NY. Aerospace Electronic Systems Dept.
AD-916 881/6 1360

F33615-72-C-2187
Computer Sciences Corp., Falls Church, VA.
AD-918 631/3 1409

F33615-73-C-1029
Texas Instruments, Inc., Dallas. Central Research Labs.
AD-B002 919/9 1437

F33615-73-C-1084
Magnavox CO Fort Wayne Ind Fort Wayne Div
AD-923 650/6 1352

F33615-73-C-1134
Rca Government and Commercial Systems Burlington Mass Aerospace Systems Div
AD-922 009/6 1352

F33615-73-C-1144
McDonnell Douglas Astronautics Co.-East, St. Louis, MO.
AD-922 519/4 1409

F33615-73-C-1222
Sci Systems Inc Huntsville Ala Advanced Systems Dept
AD-923 272/9 1358

F33615-73-C-1240
IBM Federal Systems Div., Gaithersburg, MD.
AD-918 880/6 1439

F33615-73-C-1249
Interand Corp Chicago Ill
AD-B001 109/8 1435

F33615-73-C-1267
Hughes Aircraft Co., Culver City, CA. Display Systems Dept.
AD-B004 191/3 1290

F33615-73-C-2018
Spectrolab, Inc., Sylmar, CA.
AD-B004 957/7 1366

F33615-73-C-3001
General Dynamics/Fort Worth Tex Fort Worth Div
AD-B007 465/8 1289

F33615-73-C-4137
Hughes Aircraft CO Canoga Park Calif
AD-917 204/0 1358

F33615-74-C-1001
Spectronics, Inc., Richardson, TX.
AD-B009 489/6 1440

F33615-74-C-1111
Texas Instruments, Inc., Dallas.
AD-B010 501/5 1435

F33615-74-C-2045
Eagle-Picher Industries, Inc., Joplin, MO. Electronics Div.
AD-B007 515/0 1366

F33615-74-C-3094
Science Applications, Inc., El Segundo, CA.
AD-B007 943/4 1356

AD-B008 124/0 1289

F33615-75-C-0127
Systems Research Labs., Inc., Dayton, OH.
AD-A092 008/2 1326

F33615-75-C-1047
United Technologies Research Center, East Hartford, CT.
AD-B015 026/8 1439

F33615-75-C-3002
Little (Arthur D.), Inc., Cambridge, MA.
AD-B007 816/2 1378

F33615-75-M-6251
National Aviation Facilities Experimental Center, Atlantic City, NJ.
AD-B044 225/1 1289

F33615-76-C-2089
Illinois Univ. at Urbana-Champaign. Dept. of Electrical Engineering.
AD-B036 761/5 1439

F33615-76-C-5315
Fabric Research Labs Inc Dedham Mass
AD-B029 209/4 1369

F33615-78-C-5002
Dayton Univ., OH. Research Inst.
AD-A091 945/6 1369

F33615-79-C-1870
Systems and Applied Sciences Corp., Riverdale, MD.
AD-A091 943/1 1288

F33657-75-C-0010
General Electric Co., West Lynn, MA. Aircraft Engine Group.
AD-B022 460/0 1455

F44620-75-C-0023
ORINCON Corp., La Jolla, CA.
AD-A092 199/9 1376

F44620-76-C-0109
Harvard Univ., Cambridge, MA. Dept. of Psychology.
AD-A092 290/6 1308

F49620-77-C-0018
TRW Defense and Space Systems Group, Redondo Beach, CA. Space Sciences Dept.
AD-A092 369/8 1292

F49620-77-C-0023
RAND Corp., Santa Monica, CA.
AD-A091 935/7 1401

F49620-77-C-0100
McDonnell Douglas Astronautics Co.-St. Louis, MO. Engineering Psychology Dept.
AD-A092 263/3 1308

F49620-77-C-0101
Texas Univ. at Austin.
AD-A092 507/3 1335

F49620-78-C-0072
McDonnell Douglas Research Labs., St. Louis, MO.
AD-A092 073/6 1450

F49620-79-C-0064
Case Western Reserve Univ., Cleveland, OH. Plasma Research Lab.
AD-A092 385/4 1447

F49620-79-C-0074
Tel-Aviv Univ. (Israel). Dept. of Interdisciplinary Studies.
AD-A091 961/3 1450

F49620-79-C-0081
Georgia Univ., Athens. Dept. of Management.
AD-A092 370/6 1305

F49620-79-C-0086
California Univ., Davis. Signal and Image Processing Lab.
AD-A092 265/8 1355

F49620-79-C-0161
Pittsburgh Univ., PA. Dept. of Mathematics and Statistics.
AD-A092 191/6 1376

AD-A092 192/4 1376

Pittsburgh Univ., PA. Inst. for Statistics and Applications.
AD-A091 960/5 1375

F49620-79-C-0170
Wright State Univ., Dayton, OH. Coll. of Business and Administration.
AD-A091 970/4 1390

F49620-79-C-0186
Maryland Univ. Baltimore County, Baltimore. Dept. of Mathematics.
AD-A092 386/2 1377

FC01-78CS35198
Security State Bank, Starkville, MS.
DOE/NASA/CR-161550 1379

FG02-79ET26106
Wisconsin Univ. Milwaukee. Coll. of Engineering and Applied Science.
DOE/ET/26106-T1 1366

FG03-78ET27170
GRIPS Joint Powers Agency, Napa, CA.
SAN-2068-1 1388

G0188035
Pennsylvania State Univ., University Park.
PB81-130858 1348

GRI-5011-321-0140
Institute of Gas Technology, Chicago, IL.
PB81-130759 1343

H0155113
Bolt Beranek and Newman, Inc., Cambridge, MA.
PB81-130833 1348

H0272010
Flow Industries, Inc., Kent, WA.
PB81-128969 1348

HUD-H-1789
RAND Corp., Santa Monica, CA.
PB81-139065 1311

PB81-139073 1311

PB81-139081 1311

PB81-139099 1311

PB81-139149 1312

PB81-139156 1312

PB81-139164 1312

PB81-139172 1312

PB81-139180 1312

PB81-139198 1313

PB81-139206 1313

PB81-139255 1313

PB81-139263 1313

PB81-139396 1314

PB81-139404 1314

PB81-139412 1314

PB81-139420 1314

PB81-139438 1314

PB81-139461 1315

HUD-H-2162R
Urban Inst., Washington, DC.
PB81-136992 1310

PB81-139008 1310

PB81-139016 1310

PB81-139024 1310

PB81-139040 1311

PB81-139057 1311

HUD-H-2249R
Brill (William) Associates, Inc., Annapolis, MD.
PB81-139115 1311

PB81-139123 1312

HUD-H-2281
International Research and Development Corp., Mattawan, MI.
PB81-139339 1329

PB81-139347 1329

PB81-139354 1330

PB81-139362 1330

HUD-H-2338R
Copley International Corp., La Jolla, CA.
PB81-139271 1301

PB81-139289 1301

PB81-139297 1301

HUD-H-2387
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-139222 1395

HUD-H-2404
Yarsley Research Labs. Ltd., Chessington (England).
PB81-139370 1374

PB81-139388 1374

HUD-H-2979
Bureau of Economic Analysis, Washington, DC. Regional Economic Analysis Div.
PB81-139305 1301

HUD-H-2984
National Inst. for Advanced Studies, Washington, DC.
PB81-139214 1313

HUD-H-2987
Purdue Univ., Lafayette, IN.
PB81-139032 1301

HUD-H-5106
National Training and Information Center, Chicago, IL.
PB81-139230 1299

J0199075
Little (Arthur D.), Inc., Cambridge, MA.
PB81-128936 1300

J0275014
Woodward Associates, Inc., San Diego, CA.
PB81-130866 1348

LEAA-76-NI-99-0036
Institute for Community Design Analysis, Inc., New York.
PB81-128670 1309

MDA903-78-C-0086
SRI International, Arlington, VA.
AD-A092 212/0 1439

MDA903-78-C-0129
Bolt Beranek and Newman, Inc., Cambridge, MA.
AD-A092 065/2 1407

MDA903-78-C-2008
Seville Research Corp., Pensacola, FL.
AD-A092 020/7 1303

AD-A092 021/5 1303

MDA903-79-C-0257
Stanford Univ., CA. Integrated Circuits Lab.

CONTRACT/GRANT NUMBER INDEX

AD-A091 969/6 1351

MDA903-79-C-0320
Institute for Defense Analyses, Arlington, VA. Program Analysis Div.
AD-A091 882/1 1401

MDA903-79-C-0434
Spire Corp., Bedford, MA.
AD-A091 983/7 1450

MDA903-80-C-0155
Computer Systems Management, Inc., Arlington, VA.
AD-A092 293/0 1356

MIPR-RA02-77
Naval Weapons Center, China Lake, CA.
AD-B026 467/1 1403

MIPR-Z70099-9-94080
Naval Research Lab., Washington, DC.
AD-A092 390/4 1407

N01-DE-5-2449
Connecticut Univ. Health Center, Farmington.
PB81-122962 1320

N01-HV-4-2950
Union Carbide Corp., Bound Brook, NJ. Chemicals and Plastics.
PB81-132987 1324

N01-HV-7-2936
Texas Heart Inst., Houston.
PB81-131773 1324

N00014-66-C-0241
Woods Hole Oceanographic Institution, MA.
AD-A091 999/3 1341

N00014-67-C-0439
Rockwell International, Thousand Oaks, CA. Science Center.
AD-A092 247/6 1369

N00014-70-A-0219-000
Arctic Inst. of North America, Arlington, VA.
AD-A092 476/1 1349

N00014-74-C-0262
Woods Hole Oceanographic Institution, MA.
AD-A091 999/3 1341
AD-A092 001/7 1340
AD-A092 064/5 1340
AD-A092 082/7 1340
AD-A092 231/0 1349
AD-A092 324/3 1341
AD-A092 465/4 1340
AD-A092 483/7 1342
AD-A092 484/5 1349
Woods Hole Oceanographic Institution, MA. Dept. of Geology and Geophysics.
AD-A092 081/9 1349

N00014-75-C-0192
Louisiana State Univ., Baton Rouge. Coastal Studies Inst.
AD-A091 974/6 1348

N00014-75-C-0210
Lamont-Doherty Geological Observatory, Palisades, NY.
AD-A091 967/0 1342
AD-A091 968/8 1348
AD-A092 508/1 1342

N00014-75-C-0264
Pennsylvania State Univ., University Park. Dept. of Materials Science and Engineering.
AD-A092 432/4 1370

N00014-75-C-0305
Virginia Univ., Charlottesville. Dept. of Chemistry.
AD-A091 936/5 1332
AD-A092 269/0 1331
AD-A092 270/8 1331

N00014-75-C-0394
Princeton Univ., NJ. Dept. of Electrical Engineering and Computer Science.
AD-A091 917/5 1449
AD-A092 088/4 1450

N00014-75-C-0502
Woods Hole Oceanographic Institution, MA.
AD-A092 327/6 1341

N00014-75-C-0514
Dartmouth Coll., Hanover, NH. Dept. of Mathematics.
AD-A092 500/8 1302

N00014-75-C-0536
Washington Univ., Seattle. Lab. for Chemometrics.
AD-A092 213/8 1333

N00014-75-C-0573
Ohio State Univ., Columbus. Computer and Information Science Research Center.
AD-A092 230/2 1355

N00014-75-C-0643
Massachusetts Inst. of Tech., Cambridge. Artificial Intelligence Lab.
AD-A092 294/8 1356

N00014-75-C-0661
Massachusetts Inst. of Tech., Cambridge. Artificial Intelligence Lab.
AD-A092 294/8 1356

N00014-75-C-0729
George Washington Univ., Washington, DC. Inst for Management Science and Engineering.
AD-A092 254/2 1376

N00014-75-C-0809
North Carolina Univ. at Chapel Hill. Inst. of Statistics.
AD-A092 163/5 1375

N00014-75-C-0893
Washington Univ., Seattle. Dept. of Oceanography.
AD-A091 965/4 1348

N00014-75-C-0916
Texas Univ. at Austin.
AD-A092 507/3 1335

N00014-75-C-0919
State Univ. of New York at Albany. Dept. of Physics.
AD-A092 007/4 1450

N00014-75-C-0922
Texas Univ. at Austin. Dept. of Chemistry.
AD-A092 222/9 1333
AD-A092 223/7 1333

N00014-75-C-0951
Massachusetts Inst. of Tech., Cambridge. Research Lab. of Electronics.
AD-A091 879/7 1436
Massachusetts Inst. of Tech., Lexington. Lincoln Lab.
AD-A092 128/8 1358

N00014-75-C-0986
Space Sciences, Inc., Monrovia, CA.
AD-A092 148/6 1456

N00014-75-C-1126
Lamont-Doherty Geological Observatory, Palisades, NY.
AD-A091 966/2 1436

N00014-76-1058
Georgia State Univ., Atlanta. Dept. of Biology.
PB81-126567 1324

N00014-76-C-0001
Center for Naval Analyses, Alexandria, VA. Inst. of Naval Studies.
AD-A092 108/0 1304

N00014-76-C-0010
New York Univ., NY. Courant Inst. of Mathematical Sciences.
AD-A092 062/9 1436

N00014-76-C-0012
Iowa Inst. of Hydraulic Research, Iowa City.
AD-A092 431/6 1392

N00014-76-C-0016
Iowa Univ., Iowa City. Dept. of Physics and Astronomy.
AD-A091 895/3 1292
AD-A092 086/8 1293

N00014-76-C-0025
California Univ., San Diego, La Jolla. Inst. of Geophysics and Planetary Physics.
AD-A092 047/0 1341
AD-A092 052/0 1375

N00014-76-C-0197
Woods Hole Oceanographic Institution, MA.
AD-A091 937/3 1341
AD-A092 000/9 1348
AD-A092 325/0 1341
AD-A092 327/6 1341
AD-A092 464/7 1342
AD-A092 485/2 1342
AD-A092 486/0 1349
Woods Hole Oceanographic Institution, MA. Dept. of Physical Oceanography.
AD-A092 080/1 1341

N00014-76-C-0207
Stanford Univ., CA. Inst. for Plasma Research.
AD-A091 898/7 1292

N00014-76-C-0326
Arizona Univ., Tucson.
AD-A091 907/6 1375

N00014-76-C-0445
California Univ., Los Angeles. School of Engineering and Applied Science.
AD-A092 480/3 1449

N00014-76-C-0578
Stanford Univ., CA. Dept. of Operations Research.
AD-A092 221/1 1376

N00014-76-C-0688
Stanford Univ., CA. Dept. of Computer Science.
AD-A092 256/7 1377

N00014-76-C-0745
Illinois Univ. at Urbana-Champaign. Dept. of Chemistry.
AD-A092 322/7 1334
AD-A092 355/7 1334
AD-A092 356/5 1334
AD-A092 357/3 1334

N00014-76-C-0826
Indiana Univ. at Bloomington. Dept. of Chemistry.
AD-A092 323/5 1334

N00014-76-C-0847
United Technologies Research Center, East Hartford, CT.
AD-A091 903/5 1439

N00014-76-C-1160
Institute for Foreign Policy Analysis Inc Cambridge Ma
AD-B025 005/0 1302
AD-B025 006/8 1302

N00014-77-C-0196
Woods Hole Oceanographic Institution, MA.
AD-A091 880/5 1436
AD-A091 998/5 1406
AD-A092 463/9 1407

N00014-77-C-0253
BioTechnology, Inc., Falls Church, VA.
AD-A092 159/3 1323

N00014-77-C-0340
Hahnemann Medical Coll. and Hospital, Philadelphia, PA. Dept. of Biological Chemistry.
AD-A092 460/5 1315

N00014-77-C-0354
North Carolina Univ. at Chapel Hill.
AD-A092 144/5 1349

N00014-77-C-0426
Texas A and M Univ., College Station. Dept. of Chemistry.
AD-A092 162/7 1333

N00014-77-C-0432
Oklahoma Univ., Norman. Dept. of Chemistry.
AD-A092 239/3 1333

N00014-77-C-0441
Rockwell International, Thousand Oaks, CA. Science Center.
AD-A092 253/4 1367

N00014-77-C-0489
Science Applications, Inc., La Jolla, CA.
AD-A092 152/8 1293

N00014-77-C-0504
Florida Univ., Gainesville. Dept. of Orthopaedics.
AD-A092 145/2 1318

N00014-77-C-0574
STD Research Corp., Arcadia, CA.
AD-A092 215/3 1447

N00014-77-C-0673
General Electric Co., Syracuse, NY. Heavy Military Equipment Dept.
AD-B030 997/1 1411

N00014-78-C-0051
Brown Univ., Providence, RI. Div. of Engineering.
AD-A092 074/4 1449

N00014-78-C-0100
Decisions and Designs, Inc., McLean, VA.
AD-A092 129/6 1308
AD-A092 259/1 1378
AD-A092 498/5 1309
AD-A092 499/3 1378

N00014-78-C-0111
Science Applications, Inc., La Jolla, CA.
AD-A092 474/6 1393
AD-A092 475/3 1393

N00014-78-C-0275
Illinois Univ. at Urbana-Champaign.
AD-A092 142/9 1451

N00014-78-C-0325
California Univ., San Diego, La Jolla. Dept. of Chemistry.
AD-A092 317/7 1333

N00014-78-C-0458
Environmental Research Inst. of Michigan, Ann Arbor. Applications Div.
AD-A092 025/6 1348

N00014-78-C-0517
Columbia Radiation Lab. New York.
AD-A092 506/5 1335

N00014-78-C-0558
Boston Coll., Chestnut Hill, MA. Dept. of Chemistry.

AD-A092 211/2 1333

N00014-78-C-0592
Texas Univ. at Austin. Dept. of Chemistry.
AD-A091 958/9 1333
AD-A091 973/8 1339

N00014-78-C-0622
Raytheon Co., Waltham, MA. Research Div.
AD-A092 320/1 1351

N00014-78-C-0647
Oklahoma Univ., Norman. School of Aerospace, Mechanical and Nuclear Engineering.
AD-A092 194/0 1368
AD-A092 197/3 1368

N00014-78-C-0658
Gibboney (Richard A.) Associates, Inc., Silver Spring, MD.
AD-A092 275/7 1304

N00014-78-C-0743
Analytics, Inc., Willow Grove, PA.
AD-A091 956/3 1308

N00014-79-C-0071
Woods Hole Oceanographic Institution, MA.
AD-A092 231/0 1349
AD-A092 326/8 1340

N00014-79-C-0231
Georgia Inst. of Tech., Atlanta. School of Information and Computer Science.
AD-A091 923/3 1353

N00014-79-C-0323
California Univ., San Diego, La Jolla. Center for Human Information Processing.
AD-A092 233/6 1308

N00014-79-C-0437
Rockwell International, Thousand Oaks, CA. Science Center.
AD-A092 382/1 1368

N00014-79-C-0515
California Univ., San Diego, La Jolla. Center for Human Information Processing.
AD-A091 925/8 1308

N00014-79-C-0576
Swanson Service Corp., Huntington Beach, CA.
AD-A092 210/4 1394

N00014-79-C-0598
Rochester Inst. of Tech., NY. Dept. of Electrical Engineering.
AD-A092 226/0 1358
AD-A092 261/7 1377

N00014-79-C-0644
State Univ. of New York at Buffalo. Dept. of Chemistry.
AD-A091 931/6 1332

N00014-79-C-0727
Lumley (John L.), Ithaca, NY.
AD-A091 944/9 1438

N00014-79-C-0874
JAYCOR, Woburn, MA.
AD-A092 424/1 1341

N00014-79-C-0991
Pennsylvania Univ., Philadelphia. Dept. of Materials Science and Engineering.
AD-A092 169/2 1369

N00014-79-M-0056
Undersea Medical Society, Inc., Bethesda, MD.
AD-A092 451/4 1328

N00014-80-C-0274
Kaitz (Edward M.) and Associates, Inc., Washington, DC.
AD-A091 963/9 1299

N00019-77-C-0358
Hughes Aircraft Co., Culver City, CA. Radar Microwave Lab.
AD-B039 121/9 1359

N00019-79-C-0062
Grumman Aerospace Corp., Bethpage, NY.
AD-A092 257/5 1288

N00024-78-C-5384
Johns Hopkins Univ., Silver Spring, MD. Applied Physics Lab.
AD-A092 378/9 1293

N00024-79-C-5333
New Mexico Inst. of Mining and Technology, Socorro. TERA Group.
AD-A092 071/0 1432
AD-A092 072/8 1432

N00039-69-C-0557
TRW Systems Group, Redondo Beach, CA.
AD-887 376/2 1359
AD-890 094/6 1359
AD-892 277/5 1360
AD-900 818/6 1360

N00123-74-C-1357
United Technologies Corp., Sunnyvale, CA. Chemical Systems Div.
AD-B014 875/9 1455

N00123-78-C-0043
Megatek Corp., San Diego, CA.
AD-A092 297/1 1452

N00123-78-C-0287
Advanced Research Resources Organization, Washington, DC.
AD-A092 418/3 1305

N00163-78-C-0332
Sertech Labs., Inc., Salem, MA.
AD-A092 076/9 1351

N00173-78-C-0203
Arinc Research Corp., Annapolis, MD.
AD-A092 068/6 1411

N00173-79-C-0361
Scientific Research Center, Santa Monica, CA.
AD-A092 264/1 1440

N00174-77-C-0287
Boston Coll., Chestnut Hill, MA. Dept. of Physics.
AD-B038 157/4 1433

N00228-76-C-3025
Bohan (Walter A.) Co., Park Ridge, IL.
AD-B024 969/8 1400

N00600-79-D-0845
Booz-Allen and Hamilton, Inc., Bethesda, MD.
AD-B043 559/4 1324

N60530-77-M-400T
Balje (O.E.), Inc., Sherman Oaks, CA.
AD-B029 195/5 1364

N60530-80-C-0087
Aerodyne Research, Inc., Bedford, MA. Center for Electro-Optical Signature Studies.
AD-A091 972/0 1293

N60921-73-C-0258
South Carolina Univ., Columbia. Coastal Research Div.
AD-A092 115/5 1341

N60921-80-C-0107
Lee (J. S.) Associates, Inc., Arlington, VA.
AD-A091 954/8 1358

N61339-74-C-0133
Human Resources Research Organization, Alexandria, VA.
AD-A092 295/5 1305

N61339-76-C-0116
International Laser Systems, Inc., Orlando, FL.
AD-A092 266/6 1304
AD-A092 267/4 1304
AD-A092 477/9 1305

N61339-77-C-0162
Logicon, Inc., San Diego, CA. Tactical and Training Systems Div.
AD-A091 930/8 1303

N61339-79-C-0042
Canyon Research Group, Inc., Westlake Village, CA.
AD-A091 912/6 1303

N62269-79-R-0740
Boeing Aerospace Co., Seattle, WA. Engineering Technology Div.
AD-A092 009/0 1302

N63126-77-M-1719
Texas Tech Univ., Lubbock. Inst. for Biotechnology.
AD-A092 313/6 1324

N66001-76-C-1082
Woods Hole Oceanographic Institution, MA.
AD-A091 998/5 1406

N68335-76-C-2280
Oklahoma State Univ., Stillwater. Fluid Power Research Center.
AD-A092 289/8 1373

NAS2-9830
Boeing Military Airplane Co., Seattle, WA.
AD-A092 175/9 1438

NAS5-20093
Iowa Univ., Iowa City. Dept. of Physics and Astronomy.
AD-A091 895/3 1292

NAS5-24420
Stanford Univ., CA. Inst. for Plasma Research.
AD-A091 898/7 1292

NAS-7-100-954654
Westinghouse Electric Corp., Pittsburgh, PA. Research and Development Center.
DOE/JPL/954654-80/12 1331

NAS-7-100-955382
Massachusetts Inst. of Tech., Cambridge. Dept. of Chemistry.
DOE/JPL/955382-79/6 1365

NAS-7-100-955696
Lockheed Missiles and Space Co., Inc., Sunnyvale, CA.
DOE/JPL/955696-80/2 1365

NAS8-27750
General Electric Co., Bay Saint Louis, MS. Engineering and Science Services Lab.
AD-B004 405/7 1432

NASA-A-437018(JM)
National Bureau of Standards, Washington, DC.
PB81-119844 1353

NGL33-018-003
Rensselaer Polytechnic Inst., Troy, NY. Dept. of Physics.
AD-A092 118/9 1333

NOAA-04-6-158-44110
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-122343 1438

NOAA-04-7-158-4406
Florida State Univ., Tallahassee. Dept. of Biological Science.
PB81-126591 1316

NOAA-04-8-M01-43
Woods Hole Oceanographic Institution, MA.
AD-A092 463/9 1407

NOAA-04-M01-189
California Univ., San Diego, La Jolla. Sea Grant Coll. Program.
PB81-134041 1340

NOAA-6-35147
South Carolina Wildlife and Marine Resources Dept., Charleston. Marine Resources Center.
PB81-120768 1317

NOBS-94535
United States Steel Corp Monroeville PA Applied Research Lab
AD-886 969/5 1370

NSF-ATA75-20554
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-124000 1384

NSF-ATM78-25264
Emmanuel Coll., Boston, MA.
AD-A092 084/3 1293

NSF-BNS75-08437
Harvard Univ., Cambridge, MA. Dept. of Psychology.
AD-A092 290/6 1308

NSF-ECS79-03731
Kentucky Univ., Lexington. Dept. of Mathematics.
AD-A092 388/8 1377

NSF-ENG78-05449
Texas Univ. at Austin. Center for Research in Water Resources.
PB81-136202 1387

NSF-ENG79-05906
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-122301 1394

NSF-ENG79-21587
Rhode Island Univ., Kingston.
PB81-132557 1317

NSF-ENV76-04262
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-123242 1449

NSF-ENV76-04263
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-124885 1395

NSF-ENV76-80073
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-124000 1384

NSF-ENV77-17834
Stanford Univ., CA. John A. Blume Earthquake Engineering Center.
PB81-120057 1394

NSF-ERS77-06495
Human Interaction Research Inst., Los Angeles, CA.
PB81-125379 1309

NSF-ISP78-18773
Westinghouse Research and Development Center, Pittsburgh, PA.
PB81-132714 1390

NSF-ISP78-22221
Federal Lab. Consortium.
PB81-122988 1299
PB81-125304 1299
PB81-125312 1299

NSF-MCS77-23738
Stanford Univ., CA. Dept. of Computer Science.
AD-A092 256/7 1377

NSF-MCS79-03554
Brown Univ., Providence, RI. Div. of Applied Mathematics.

CONTRACT/GRANT NUMBER INDEX

AD-A092 187/4 1376
AD-A092 188/2 1376
NSF-MCS79-09139
Stanford Univ., CA. Dept. of Operations Research.
AD-A092 221/1 1376
NSF-NSG-3095
State Univ. of New York at Albany. Dept. of Physics.
AD-A092 007/4 1450
NSF-OCE74-23791
California Univ., San Diego, La Jolla. Inst. of Geophysics and Planetary Physics.
AD-A092 052/0 1375
NSF-OCE75-03962
Woods Hole Oceanographic Institution, MA.
AD-A092 485/2 1342
NSF-OCE76-81190
Woods Hole Oceanographic Institution, MA.
AD-A092 000/9 1348
AD-A092 325/0 1341
NSF-OCE76-82059
Woods Hole Oceanographic Institution, MA.
AD-A092 483/7 1342
NSF-OCE77-19403
Woods Hole Oceanographic Institution, MA. Dept. of Physical Oceanography.
AD-A092 080/1 1341
NSF-OCE-77-22893
Lamont-Doherty Geological Observatory, Palisades, NY.
AD-A091 968/8 1348
NSF-OCE77-25682
North Carolina Univ. at Chapel Hill.
AD-A092 144/5 1349
NSF-OCE77-82255
Woods Hole Oceanographic Institution, MA. Dept. of Geology and Geophysics.
AD-A092 081/9 1349
NSF-OCE78-19453
Lamont-Doherty Geological Observatory, Palisades, NY.
AD-A091 967/0 1342
NSF-PFR77-20044
Universities Council for Earthquake Engineering Research, Pasadena, CA.
PB81-120081 1350
NSF-PFR77-20667
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-122269 1438
NSF-PFR77-23687
California Inst. of Tech., Pasadena. Earthquake Engineering Research Lab.
PB81-123788 1384
NSF-PFR78-09326
Purdue Univ., Lafayette, IN. School of Civil Engineering.
PB81-120032 1350
PB81-120065 1350
NSF/PFR78-15049
Weidlinger Associates, New York.
PB81-122533 1393
NSF-PFR78-23095
Virginia Polytechnic Inst. and State Univ., Blacksburg. Dept. of Engineering Science and Mechanics.
PB81-123069 1351
NSF-PFR79-08257
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-124877 1395
NSF-PFR79-08984
California Univ., Berkeley. Earthquake Engineering Research Center.
PB81-124885 1395
NSF-SOC78-09473
Florida Univ., Gainesville.
AD-A091 946/4 1375
OEG-007800597
Holmes County School District, Lexington, MA.
ED-183 162 1298
OEG-007801812
Northern Virginia Training Center for the Mentally Retarded, Fairfax.
ED-183 169 1298
PHS-DE-05030
National Bureau of Standards, Washington, DC.
PB81-126104 1320
PHS-HRA-230-75-0156
Research Triangle Inst., Research Triangle Park, NC.
PB81-128860 1321
PB81-128878 1321
PHS-HRA-230-76-0247
Drexel Univ., Philadelphia, PA.
HRP-0902233/6 1319
HRP-0902234/4 1320
PHS-HRA-231-77-0007
Association of Schools of Public Health, Arlington, VA.
HRP-0902582/6 1306
PHS-HS-01964
Johns Hopkins Medical Institutions, Baltimore, MD. Health Services Research and Development Center.
PB81-130510 1321
PHS-HS-02079
Ohio State Univ., Columbus.
PB81-133373 1321
PB81-133381 1321
PHS-HS-02269
Johns Hopkins Medical Institutions, Baltimore, MD. Health Services Research and Development Center.
PB81-130510 1321
PHS-HS-02315
Michigan Univ., Ann Arbor. Dept. of Medical Care Organization.
PB81-133613 1322
PHS-HS-02714
Michigan Univ., Ann Arbor. School of Public Health.
PB81-135790 1322
PHS-HS-02862
John F. Kennedy School of Government, Cambridge, MA.
PB81-130544 1321
PB81-130551 1321
PHS-HS-03195
Pennsylvania Univ., Philadelphia. Dept. of Sociology.
PB81-133365 1307
PHS-HS-03667-01
Maryland Univ., College Park.
PB81-125536 1309
PHS-1-R03-HS-02315-01A1
Michigan Univ., Ann Arbor. Dept. of Medical Care Organization.
PB81-133613 1322
S0271041
Mathematical Applications Group, Inc., Elmsford, NY.
PB81-125528 1348
SBA-2643-OA-79
Georgia Univ., Athens. Coll. of Business Administration.
PB81-128852 1300
W-31-109-ENG-38
Argonne National Lab., IL.
ANL/EES-TM-101 1316
ANL-PHY-79-2(Rev.1) 1441
Boston Univ., MA.
CONF-7911108- 1294
Faucett (Jack) Associates, Inc., Chevy Chase, MD.
ANL/CNSV-TM-42 1364
W-7405-ENG-26
Babcock and Wilcox Co., Lynchburg, VA. Power Generation Div.
ORNL/Sub-7496/1 1430
Department of Energy, Washington, DC.
PAT-APPL-6-111 495 1337
PAT-APPL-6-119 738 1454
Oak Ridge Gaseous Diffusion Plant, TN.
GJBX-185(80) 1346
K/ET-594 1337
Oak Ridge National Lab., TN.
CONF-800212- 1362
CONF-800427-19(Dr) 1414
CONF-800607-87(Dr) 1423
CONF-800641-7 1367
CONF-800770-1 1414
CONF-800814-22(Dr) 1420
CONF-800870-1 1420
CONF-800942-4 1422
CONF-800942-10 1430
CONF-800942-14 1427
CONF-801011-3 1415
CONF-801011-5 1415
CONF-801011-10 1414
CONF-801011-14 1415
CONF-801011-15 1415
CONF-801037-21 1415
CONF-801038-3 1426
CONF-801038-4 1423
CONF-801079-2 1453
CONF-801090-2 1393
CONF-801090-3 1330
CONF-801113-3 1298
CONF-8010106-2 1357
CONF-8010108-2 1319
CONF-8010108-3 1315
DOE/TIC-11273 1327
DOE/TIC-11281 1416
DOE/TIC-11282 1416
DOE/TIC-11285 1337
DOE/TIC-11287 1444
NUREG/CR-1761 1422
ORNL/CSD-53 1428
ORNL/CSD-66 1371
ORNL/EIS-156/V1 1424
ORNL/TM-7122 1417
ORNL/TM-7124(Dr) 1417
ORNL/TM-7341 1446
ORNL/TM-7452 1418
ORNL/TM-7483 1362
ORNL/TM-7503 1418
ORNL-5462 1426
ORNL-5567 1343
ORNL-5671 1362
ORNL-5673 1430
PB81-132409 1323
Paducah Gaseous Diffusion Plant, KY.
KY-697 1422
W-7405-ENG-36
Los Alamos Scientific Lab., NM.
DOE/EV-0103 1365
DOE/TIC-11293 1379
LA-UR-80-2675 1445
LA-UR-80-2702 1423
LA-UR-80-2707 1423
LA-UR-80-3099 1357
LA-8194-M 1430
LA-8468-T 1377
LA-8488-T 1417
LA-8524-PR 1445
LA-8539-PR 1424
W-7405-ENG-48
Brookhaven National Lab., Upton, NY.
UCRL-84888 1420
California Univ., Berkeley.
LBL-11434 1337
California Univ., Berkeley. Lawrence Berkeley Lab.
LBL-10301 1441
LBL-10688 1445
LBL-10768 1422
LBL-10899 1445
LBL-11167 1454
LBL-11429 1417
LBL-11510 1445
LBL-11517 1446
LBL-11561 1446
California Univ., Livermore. Lawrence Livermore Lab.
EPRI-AP-1544 1416
UCAR-10042-80 1419
UCID-18521 1372
UCID-18681 1425
UCID-18819 1361
UCRL-15284 1419
UCRL-52916 1357
UCRL-52959 1426
UCRL-52960-3 1392
UCRL-84153 1425
Department of Energy, Washington, DC.
PAT-APPL-6-101 364 1383
Energy Technology Engineering Center, Canoga Park, CA.
UCRL-84273 1419
Grumman Aerospace Corp., Bethpage, NY.
UCRL-15292 1419
Lawrence Livermore National Lab., CA.
UCID-18676 1422
UCID-18683 1428
UCID-18783 1426
UCRL-83794 1419
UCRL-84233 1419
UCRL-84235 1419
UCRL-84271 1419
UCRL-84272 1419

UCRL-84275 1419
UCRL-84463 1420
UCRL-84478 1420
UCRL-85002 1420
UCRL-85019 1388
UCRL-85033 1448
Owens-Illinois, Inc., Toledo, OH. Corporate Technology Div.
UCRL-15285 1440
Teknekron Research, Inc., Berkeley, CA. Systems Div.
UCRL-15275 1429
Weidlinger Associates, New York.
UCRL-15261 1429

NTIS ORDER/REPORT NUMBER INDEX

NTIS®

Entries in this index list the NTIS order number, the performing organization report number, and the sponsoring organization report number, each in its own alphanumeric position. Although reports may be ordered using only the performing organization report number or the sponsoring organization report number, please use the NTIS order number to order items available from NTIS to ensure faster service. It is best to check the full bibliographic citation in the Reports Announcements section before ordering. Entries are arranged alphanumerically.

SAMPLE ENTRY

NSF/RA-790206
Computation of Hankel Transforms Using the Fast-Fourier Transform Algorithm.
PB80-104045 93 PC **A03**/MF **A01**

PB80-104045
Computation of Hankel Transforms Using the Fast-Fourier Transform Algorithm.
PB80-104045 33 PC **A03**/MF **A01**

R79-12
Computation of Hankel Transforms Using the Fast-Fourier Transform Algorithm.
PB80-104045 33 PC **A03**/MF **A01**

Report or series number
Title
NTIS order number Page no. Price codes

Report or series number
Title
NTIS order number Page no. Price codes

Report or series number
Title
NTIS order number Page no. Price codes

30-3067
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303 PC **A07**/MF **A01**

31
Analytic Methods for the Approximate Solution of Singularly Perturbed Systems.
AD-A091 907/6 1375 PC **A02**/MF **A01**

37
Risk and Public Policy.
PB81-120057 1394 PC **A04**/MF **A01**

73-AR-1
Some Applications of Hybrid Thick Film Technology.
AD-917 846/8 1360 PC **A05**/MF **A01**

78-019
Target Recognition System Design: Computational Structures with Response Time Characteristics Dictated by the Operational Environment.
AD-B041 709/7 1413 PC **A03**/MF **A01**

80SDS4213
Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354 PC **A11**/MF **A01**

1366-B
Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.
AD-A091 956/3 1308 PC **A08**/MF **A01**

3664-F
Modifications to Devenco Model PPS-3A Radar Fence.
AD-885 234/5 1413 PC **A02**/MF **A01**

6169
AS-11/B Stereoplotter Experiments and Studies.
AD-900 360/9 1341 PC **A06**/MF **A01**

6752
Redundant Area Coding Study.
AD-888 625/1 1358 PC **A08**/MF **A01**

8004
Errors in Human Performance.
AD-A091 925/8 1308 PC **A03**/MF **A01**

8005
Analogical Processes in Learning.
AD-A092 233/6 1308 PC **A03**/MF **A01**

A02010-520-03-007
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432 PC **A05**/MF **A01**

A-04773-VOL-1-PT-1
Lightweight radar alarm system. Vol. 1.
AD-482 920/6 1413 PC **A07**/MF **A01**

A-04773-VOL-2
Lightweight radar alarm system. Vol. 2.
AD-482 913/1 1413 PC **A10**/MF **A01**

AAI-ER-8296
Development of a Thin-Wall 20mm Explosive Projectile.
AD-B007 705/7 1432 PC **A05**/MF **A01**

AAI-ER-8939
Development of a Lightweight 25mm Explosive Projectile.
AD-B026 541/3 1433 PC**$7.00***

AD-A091 877/1
Reprint: An Approach to Programmable CTD Filters Using Coefficients 0, + 1, and -1.
AD-A091 877/1 1358 PC **A02**/MF **A01**

AD-A091 878/9
Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.
AD-A091 878/9 1292 PC **A02**/MF **A01**

AD-A091 879/7
Reprint: A Technique for the Evaluation of Circularly Symmetric Two-Dimensional Fourier Transforms and Its Application to the Measurement of Ocean Bottom Reflection Coefficients.
AD-A091 879/7 1436 PC **A02**/MF **A01**

AD-A091 880/5
Reprint: A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom.
AD-A091 880/5 1436 PC **A02**/MF **A01**

AD-A091 881/3
Production of Insulated Footwear Using Liquid Injection Molding Equipment. 1. Method.

AD-A091 881/3 1400 MF **A01**

AD-A091 882/1
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401 PC **A10**/MF **A01**

AD-A091 883/9
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439 PC **A03**/MF **A01**

AD-A091 884/7
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296 PC **A10**/MF **A01**

AD-A091 885/4
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412 PC **A05**/MF **A01**

AD-A091 886/2
A Congeries of Numerical Models used at the BRL.
AD-A091 886/2 1434 PC **A08**/MF **A01**

AD-A091 887/0
The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
AD-A091 887/0 1373 PC **A03**/MF **A01**

AD-A091 888/8
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292 PC **A03**/MF **A01**

AD-A091 889/6
Army 86 Cost Sensitivity Analysis Verification.
AD-A091 889/6 1401 PC **A04**/MF **A01**

AD-A091 890/4
Dynamic Hull and Propeller Interaction Factors for FF-1052 Predicted from Quasi-Steady Model Experiments.
AD-A091 890/4 1392 PC **A02**/MF **A01**

AD-A091 891/2
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288 PC **A03**/MF **A01**

AD-A091 892/0
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323 PC **A05**/MF **A01**

AD-A091 893/8
Production of Nitrous Oxide in a Rocket Motor Exhaust.
AD-A091 893/8 1380 PC **A02**/MF **A01**

AD-A091 894/6
Correct Balance of Defense's Foreign Military Sales Trust Fund Unknown.
AD-A091 894/6 1296 PC **A03**/MF **A01**

AD-A091 895/3
Reprint: The Volume Emissivity of Type III Radio Bursts.
AD-A091 895/3 1292 PC **A02**/MF **A01**

AD-A091 896/1
Reprint: Endogenous Pyrogen Physiology.
AD-A091 896/1 1317 Not available NTIS

AD-A091 897/9
Reprint: Survival of Legionella pneumophila in Aerosols: Effect of Relative Humidity.
AD-A091 897/9 1317 Not available NTIS

AD-A091 898/7
Reprint: Origin of the Warped Heliospheric Current Sheet.
AD-A091 898/7 1292 Not available NTIS

AD-A091 899/5
Reprint: A Probable Endocrine Basis for the Depression of Ketone Bodies during Infectious or Inflammatory State in Rats.
AD-A091 899/5 1317 Not available NTIS

AD-A091 900/1
Reprint: Inhibition of Diphtheria Toxin Degradation and Cytotoxic Action by Chloroquine.
AD-A091 900/1 1317 Not available NTIS

AD-A091 901/9
A Comparison of the Inflammatory Response Produced by Commercial Eugenol and Purified Eugenol,
AD-A091 901/9 1325 PC **A02**/MF **A01**

AD-A091 902/7
Research in Monolithic, Signal-Processing Circuits.
AD-A091 902/7 1358 PC **A02**/MF **A01**

AD-A091 903/5
Investigation of Plasma Processes in Electronic Transition Lasers.
AD-A091 903/5 1439 PC **A05**/MF **A01**

AD-A091 904/3
Hardware Realizations for Digital Signal Processing.
AD-A091 904/3 1359 PC **A02**/MF **A01**

AD-A091 905/0
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454 PC **A02**/MF **A01**

AD-A091 906/8
P-3 Orion Fuel-Saving Modification Wind Tunnel Study,
AD-A091 906/8 1288 PC **A04**/MF **A01**

AD-A091 907/6
Analytic Methods for the Approximate Solution of Singularly Perturbed Systems.
AD-A091 907/6 1375 PC **A02**/MF **A01**

AD-A091 908/4
A Near-Surface Burst EMP Driver Package for Neutron-Induced Sources.
AD-A091 908/4 1421 PC **A04**/MF **A01**

AD-A091 909/2
Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
AD-A091 909/2 1392 PC **A03**/MF **A01**

AD-A091 910/0
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353 PC **A04**/MF **A01**

AD-A091 911/8
Spectral Ratios for Explosions in Salt.
AD-A091 911/8 1349 PC **A03**/MF **A01**

AD-A091 912/6
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303 PC **A07**/MF **A01**

AD-A091 913/4
Influence of Wave Refraction on Coastal Geomorphology-Bull Island to Isle of Palms, South Carolina.
AD-A091 913/4 1341 PC **A10**/MF **A01**

AD-A091 914/2
The Toxicity of Photographic Chemicals.
AD-A091 914/2 1328 PC **A19**/MF **A01**

AD-A091 915/9
Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938,
AD-A091 915/9 1288 PC **A02**/MF **A01**

AD-A091 916/7
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456 PC **A02**/MF **A01**

AD-A091 917/5
Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449 PC **A02**/MF **A01**

AD-A091 918/3
Reprint: Isolation and Characterization of Minicell-Producing Mutants and Shigella spp.
AD-A091 918/3 1317 PC **A02**/MF **A01**

AD-A091 919/1
Reprint: Experimental Endotoxin Shock: The Pathophysiologic Function of Endorphins and Treatment with Opiate Antagonists.
AD-A091 919/1 1317 PC **A02**/MF **A01**

AD-A091 920/9
Reprint: Elevated Glycosyltransferase Activities in Infected or Traumatized Hosts: Nonspecific Response to Inflammation.
AD-A091 920/9 1317 Not available NTIS

AD-A091 921/7
Reprint: Ketoconazole in Early and Late Murine Coccidioidomycosis.
AD-A091 921/7 1317 Not available NTIS

AD-A091 922/5
Reprint: Effects of Intravenous and Aerosol Administration of Crude Shigella Toxin to Rhesus Macaques: Preliminary Study.
AD-A091 922/5 1317 Not available NTIS

AD-A091 923/3
Software Project Forecasting,
AD-A091 923/3 1353 PC **A02**/MF **A01**

AD-A091 924/1
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454 PC **A05**/MF **A01**

AD-A091 925/8
Errors in Human Performance.
AD-A091 925/8 1308 PC **A03**/MF **A01**

AD-A091 926/6
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303 PC **A04**/MF **A01**

AD-A091 927/4
Design Considerations for the Infrared Airborne Radar (IRAR) MTI Subsystem.
AD-A091 927/4 1411 PC **A05**/MF **A01**

AD-A091 928/2
STARAN Image Processing.
AD-A091 928/2 1353 PC **A05**/MF **A01**

AD-A091 929/0
Local Energy Monitoring and Control Analysis.
AD-A091 929/0 1378 PC **A04**/MF **A01**

AD-A091 930/8
Ground Controlled Approach Controller Training System (GCA-CTS) Student Guide.
AD-A091 930/8 1303 PC **A09**/MF **A01**

AD-A091 931/6
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332 PC **A03**/MF **A01**

AD-A091 932/4
Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388 PC **A02**/MF **A01**

AD-A091 933/2
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
AD-A091 933/2 1359 PC **A04**/MF **A01**

AD-A091 934/0
The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326 PC **A02**/MF **A01**

AD-A091 935/7
Models and Techniques for Recoverable Item Stockage when Demand and the Repair Process are Nonstationary. Part I. Performance Measurement.
AD-A091 935/7 1401 PC **A03**/MF **A01**

AD-A091 936/5
Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332 PC **A03**/MF **A01**

AD-A091 937/3
Seasonal Variability in the Intermediate Waters of the Eastern North Atlantic.
AD-A091 937/3 1341 PC **A08**/MF **A01**

AD-A091 938/1
Summary of Aviation Safety Program Resumes. Cabin Safety.
AD-A091 938/1 1288 PC **A03**/MF **A01**

AD-A091 939/9
NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
AD-A091 939/9 1421 PC **A02**/MF **A01**

AD-A091 940/7
Correlation of Model Experiments with Ship Powering Data for Three Tankers Represented by Models 9006, 9007, 9008, and 9009.
AD-A091 940/7 1392 PC **A03**/MF **A01**

AD-A091 941/5
Deep Level Transient Spectroscopy as an Experimental Technique.
AD-A091 941/5 1449 PC **A03**/MF **A01**

AD-A091 942/3
Bathymetric Data Reduction System.
AD-A091 942/3 1348 PC **A09**/MF **A01**

AD-A091 943/1
A Survey of Computer Simulations of Digital Avionics Systems.
AD-A091 943/1 1288 PC **A05**/MF **A01**

AD-A091 944/9
Reprint: Some Comments on the Energy Method.
AD-A091 944/9 1438 Not available NTIS

AD-A091 945/6
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
AD-A091 945/6 1369 PC **A03**/MF **A01**

AD-A091 946/4
Some Extensions of the Nerlove-Press Model.
AD-A091 946/4 1375 PC **A02**/MF **A01**

AD-A091 947/2
Response of a Point Excited Infinitely Long Cylindrical Shell Immersed in an Acoustic Medium.
AD-A091 947/2 1449 PC **A04**/MF **A01**

AD-A091 948/0
SES Multi-Purpose Ship Study. Transport Application. Volume 1. Technical Summary.
AD-A091 948/0 1392 PC **A09**/MF **A01**

AD-A091 949/8
Effect of Cross Grain on Stress Waves in Lumber.
AD-A091 949/8 1374 PC **A02**/MF **A01**

AD-A091 950/6
Civil Affairs Developments.
AD-A091 950/6 1303 PC **A03**/MF **A01**

AD-A091 951/4
Old Theories versus Changing Environment,
AD-A091 951/4 1308 PC **A02**/MF **A01**

AD-A091 952/2
Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
AD-A091 952/2 1359 PC **A10**/MF **A01**

AD-A091 953/0
Spacecraft Charging Standard Report.
AD-A091 953/0 1456 PC **A04**/MF **A01**

AD-A091 954/8
Multi-Sensor Detection Study.
AD-A091 954/8 1358 PC **A06**/MF **A01**

AD-A091 955/5
Design Study for Ground-Based Atmospheric Lidar System.
AD-A091 955/5 1292 PC **A11**/MF **A01**

AD-A091 956/3
Application of Multidimensional Scaling to Decision Situation Prioritization and Decision Aid Design.

AD-A091 956/3 1308 PC **A08**/MF **A01**

AD-A091 957/1

Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
AD-A091 957/1 1353 PC **A03**/MF **A01**

AD-A091 958/9

On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333 PC **A02**/MF **A01**

AD-A091 959/7

Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354 PC **A11**/MF **A01**

AD-A091 960/5

Distributions of Some Matrix Variates and Latent Roots in Multivariate Behrens-Fisher Discriminant Analysis.
AD-A091 960/5 1375 PC **A02**/MF **A01**

AD-A091 961/3

Interdiffusion of Metals and Semiconductors.
AD-A091 961/3 1450 PC **A02**/MF **A01**

AD-A091 962/1

Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
AD-A091 962/1 1288 PC **A02**/MF **A01**

AD-A091 963/9

Overhead Costs and Rates in the U.S. Defense Industrial Base. Volume 1.
AD-A091 963/9 1299 PC **A06**/MF **A01**

AD-A091 964/7

Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
AD-A091 964/7 1374 PC **A02**/MF **A01**

AD-A091 965/4

Reprint: Freshwater and Atlantic Water in the Kara Sea.
AD-A091 965/4 1348 PC **A02**/MF **A01**

AD-A091 966/2

Reprint: Seafloor and Near-Surface Sound Velocities from Barents Sea Sonobuoy Data.
AD-A091 966/2 1436 PC **A02**/MF **A01**

AD-A091 967/0

Reprint: Aragonite from Deep Sea Ultramafic Rocks.
AD-A091 967/0 1342 PC **A02**/MF **A01**

AD-A091 968/8

Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348 PC **A02**/MF **A01**

AD-A091 969/6

Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351 PC **A18**/MF **A01**

AD-A091 970/4

The Study of Production Leadtime Forecasting Models.
AD-A091 970/4 1390 PC **A03**/MF **A01**

AD-A091 971/2

Viscous Flow over Arbitrary Geometries at High Angle of Attack.
AD-A091 971/2 1438 PC **A02**/MF **A01**

AD-A091 972/0

Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293 PC **A11**/MF **A01**

AD-A091 973/8

The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339 PC **A03**/MF **A01**

AD-A091 974/6

Reprint: High-Precision Instrumentation System for Sea-Bed Pressure Measurements in Muddy Sediments.
AD-A091 974/6 1348 PC **A02**/MF **A01**

AD-A091 975/3

Attractivity Properties of alpha-Contractions.
AD-A091 975/3 1375 PC **A02**/MF **A01**

AD-A091 976/1

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380 PC **A06**/MF **A01**

AD-A091 977/9

Distance Measuring Equipment Traffic-Loading Capacity Investigation.
AD-A091 977/9 1412 PC **A04**/MF **A01**

AD-A091 978/7

Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
AD-A091 978/7 1435 PC **A04**/MF **A01**

AD-A091 979/5

Job Performance Aid: Job and Task Analysis.
AD-A091 979/5 1303 PC **A04**/MF **A01**

AD-A091 980/3

Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
AD-A091 980/3 1293 PC **A03**/MF **A01**

AD-A091 981/1

An Improved Flight Data Transcriber.
AD-A091 981/1 1398 PC **A03**/MF **A01**

AD-A091 982/9

Reprint: Analysis of Gas Dissociation Solar Thermal Power System.
AD-A091 982/9 1363 Not available NTIS

AD-A091 983/7

HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450 PC **A03**/MF **A01**

AD-A091 984/5

Relationship between Ms and mb for Small Earthquakes in Uzbekistan, USSR.
AD-A091 984/5 1349 PC **A03**/MF **A01**

AD-A091 985/2

Integrated Coding and Waveform Design Study.
AD-A091 985/2 1410 PC **A17**/MF **A01**

AD-A091 986/0

Inflatable Liferaft Stability Study.
AD-A091 986/0 1323 PC **A06**/MF **A01**

AD-A091 987/8

Optimization of Multichannel Processing.
AD-A091 987/8 1358 PC **A02**/MF **A01**

AD-A091 988/6

Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
AD-A091 988/6 1431 MF **A01**

AD-A091 989/4

Final Technical Report, 15 September 1975-14 July 1980.
AD-A091 989/4 1378 PC **A02**/MF **A01**

AD-A091 990/2

USAF Test Pilot School. Flight Test Handbook. Performance. Theory and Flight Techniques. Chapters 1 through 9.
AD-A091 990/2 1303 PC **A99**/MF **A01**

AD-A091 991/0

Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447 PC **A02**/MF **A01**

AD-A091 992/8

An HP-67 Combat Model.
AD-A091 992/8 1402 PC **A03**/MF **A01**

AD-A091 993/6

Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354 PC **A03**/MF **A01**

AD-A091 994/4

Architecture for Higher Level Digital Image Processing.
AD-A091 994/4 1354 MF **A01**

AD-A091 995/1

Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354 PC **A02**/MF **A01**

AD-A091 996/9

Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354 PC **A03**/MF **A01**

AD-A091 997/7

Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
AD-A091 997/7 1450 PC **A02**/MF **A01**

AD-A091 998/5

Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406 PC **A02**/MF **A01**

AD-A091 999/3

Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341 PC **A03**/MF **A01**

AD-A092 000/9

Reprint: Anomalous Water in the Deep Ocean Suggests Lateral Advection-Stirring.
AD-A092 000/9 1348 PC **A02**/MF **A01**

AD-A092 001/7

Reprint: Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
AD-A092 001/7 1340 PC **A02**/MF **A01**

AD-A092 002/5

Reprint: Immune Reactivities of Antibodies against Glycolipids.
AD-A092 002/5 1317 PC **A02**/MF **A01**

AD-A092 003/3

Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437 PC **A02**/MF **A01**

AD-A092 004/1

Reprint: Some Physical Insights into Beam Propagation in Strong Turbulence.
AD-A092 004/1 1440 PC **A02**/MF **A01**

AD-A092 005/8

Reprint: Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment.
AD-A092 005/8 1440 PC **A02**/MF **A01**

AD-A092 006/6

Reprint: Airborne Studies of Equatorial F Layer Ionospheric Irregularities.
AD-A092 006/6 1293 PC **A02**/MF **A01**

AD-A092 007/4

Reprint: Photodegradation in Silicon.
AD-A092 007/4 1450 Not available NTIS

AD-A092 008/2

Reprint: Suprathreshold Processing of Complex Visual Stimuli: Evidence for Linearity in Contrast Perception.
AD-A092 008/2 1326 PC **A02**/MF **A01**

AD-A092 009/0

Navy Manager's Guide for the Design Sections of MIL-H-46855.
AD-A092 009/0 1302 PC **A04**/MF **A01**

AD-A092 010/8

Speech Algorithm Optimization at 16 KBPS.
AD-A092 010/8 1407 PC **A12**/MF **A01**

AD-A092 011/6

Two-Stage Servovalve Development Using a First-Stage Fluidic Amplifier.
AD-A092 011/6 1393 PC **A03**/MF **A01**

AD-A092 012/4

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380 PC **A05**/MF **A01**

AD-A092 013/2

Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380 PC **A06**/MF **A01**

AD-A092 014/0

Mathematical Analyses of Landside Seepage Berms.
AD-A092 014/0 1350 PC **A04**/MF **A01**

AD-A092 015/7

Guidance and Control of Anti-Tactical Ballistic Missiles.
AD-A092 015/7 1400 PC **A03**/MF **A01**

AD-A092 016/5

Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394 PC **A05**/MF **A01**

AD-A092 017/3

Discrete Scattering Approach to Vegetation Modeling.
AD-A092 017/3 1452 PC **A04**/MF **A01**

AD-A092 018/1

Airport Ground Access Planning Guide.
AD-A092 018/1 1290 PC **A07**/MF **A01**

AD-A092 019/9

Ad Hoc Sub-Group Interim Report on National Training Center.
AD-A092 019/9 1303 PC **A02**/MF **A01**

AD-A092 020/7

Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume I. Executive Summary.
AD-A092 020/7 1303 PC **A02**/MF **A01**

AD-A092 021/5

Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume II. Evaluation Report.
AD-A092 021/5 1303 PC **A11**/MF **A01**

AD-A092 022/3

Wood Products Used in Military Construction in the United States - 1962 and 1978.
AD-A092 022/3 1374 PC **A02**/MF **A01**

AD-A092 023/1

Wood Products Used in Constructing Conservation and Development Projects by the Corps of Engineers in the United States - 1962 and 1978.
AD-A092 023/1 1374 PC **A02**/MF **A01**

AD-A092 024/9

European Scientific Notes. Volume 33, Number 5.
AD-A092 024/9 1297 PC **A03**/MF **A01**

AD-A092 025/6

Coastal Remote Sensing Investigations. Volume 1. Marine Environment.
AD-A092 025/6 1348 PC **A04**/MF **A01**

AD-A092 026/4

University Curricula in the Marine Sciences and Related Fields. Academic Years 1969-70 and 1970-71.
AD-A092 026/4 1304 PC **A13**/MF **A01**

AD-A092 027/2

Design of Fluidic Devices for Small Arms Stabilization.
AD-A092 027/2 1435 PC **A03**/MF **A01**

AD-A092 028/0

Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454 PC **A05**/MF **A01**

AD-A092 029/8

Concepts for Utilization of Video Discs in Military Applications.
AD-A092 029/8 1398 PC **A04**/MF **A01**

AD-A092 030/6

Adaptive Antenna Control (AAC) Program.
AD-A092 030/6 1407 PC **A15**/MF **A01**

AD-A092 031/4

Evaluation of Time Domain EM Coupling Techniques. Volume I.
AD-A092 031/4 1452 PC **A09**/MF **A01**

AD-A092 032/2

Evaluation of Time Domain EM Coupling Techniques. Volume II.

AD-A092 032/2 1452 PC **A05**/MF **A01**

AD-A092 033/0
Harwell Subroutine Library. A Catalogue of Subroutines (1973).
AD-A092 033/0 1375 PC **A07**/MF **A01**

AD-A092 034/8
Harwell Subroutine Library. A Catalogue of Subroutines (1973). Supplement Number 2.
AD-A092 034/8 1375 PC **A02**/MF **A01**

AD-A092 035/5
Proceedings of the TRADOC/Training Developments Institute Chiefs of Anlaysis Seminar (4th) Held in Hampton, Virginia, 16-18 July 1980.
AD-A092 035/5 1304 MF **A01**

AD-A092 036/3
National Dam Safety Program. Nanticoke Creek Watershed Project Site 10 Dam (Inventory I.D. Number NY 713, DEC 85D-3946, Susquehanna River Basin, Broome County, New York, Phase I Inspection Report,
AD-A092 036/3 1380 MF **A01**

AD-A092 037/1
National Dam Safety Program, Browns Reservoir Dam (Inventory Number ID NY-763, DEC Number 232 BE-4361), Long Island Basin, Westchester County, New York. Phase I Inspection Report,
AD-A092 037/1 1380 MF **A01**

AD-A092 038/9
National Dam Safety Program. Mt. Beacon Reservoir (Inventory Number NY-26), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 038/9 1381 MF **A01**

AD-A092 039/7
National Dam Safety Program. Morgan Lake Dam (Inventory Number NY-787), Hudson River Basin, Dutchess County, New York. Phase I Inspection Reprot,
AD-A092 039/7 1381 MF **A01**

AD-A092 040/5
National Dam Safety Program. Harlem Valley Reservoir (Inventory Number N.Y. 273), Housatonic River Basin, Dutchess County, New York. Phase I Inspection Report,
AD-A092 040/5 1381 MF **A01**

AD-A092 041/3
Laser Transmissometer, Installation, Alignment and Instruction Manual.
AD-A092 041/3 1395 MF **A01**

AD-A092 042/1
National Dam Safety Program. Garnerville Dam (Inventory Number N.Y. 744), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 042/1 1381 MF **A01**

AD-A092 043/9
Proceedings of OSD Aircraft Engine Design & Life Cycle Cost Seminar Held at Naval Air Development Center, Warminster, Pennsylvania, May 17, 18 & 19, 1978,
AD-A092 043/9 1454 MF **A01**

AD-A092 044/7
Reprint: A Double-Ended, Unstable Resonator Submillimeter Laser.
AD-A092 044/7 1439 Not available NTIS

AD-A092 045/4
Reprint: Sand Motion Initiation by Water Waves: Two Asymptotes.
AD-A092 045/4 1341 PC **A02**/MF **A01**

AD-A092 046/2
Reprint: Further Remarks on the Mechanism Producing the Symptoms of Meniere's Disease.
AD-A092 046/2 1317 Not available NTIS

AD-A092 047/0
Reprint: Guided Solitary Waves.
AD-A092 047/0 1341 PC **A02**/MF **A01**

AD-A092 048/8
Reprint: Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance.
AD-A092 048/8 1308 Not available NTIS

AD-A092 049/6
Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325 PC **A02**/MF **A01**

AD-A092 050/4
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325 PC **A02**/MF **A01**

AD-A092 051/2
Reprint: Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions.
AD-A092 051/2 1440 Not available NTIS

AD-A092 052/0
Reprint: The Second Painleve Transcendent: A Nonlinear Airy Function.
AD-A092 052/0 1375 PC **A02**/MF **A01**

AD-A092 053/8
Reprint: Frequency-Stabilized Hybrid CO Laser.
AD-A092 053/8 1439 Not available NTIS

AD-A092 054/6
Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
AD-A092 054/6 1296 PC **A07**/MF **A01**

AD-A092 055/3
Network Management Research.
AD-A092 055/3 1407 PC **A04**/MF **A01**

AD-A092 056/1
Food System Support of the Relocation Strategy in California. Volume I. Analysis.
AD-A092 056/1 1400 PC **A08**/MF **A01**

AD-A092 057/9
Modal Analysis for Aircraft Response to Runway Surface Roughness.
AD-A092 057/9 1290 PC **A03**/MF **A01**

AD-A092 058/7
A New Theory for Striations with Experimental Verifications.
AD-A092 058/7 1447 PC **A07**/MF **A01**

AD-A092 059/5
Hardware and Performance Evaluation: Tethered Float Breakwater Near-Shore Ocean Model.
AD-A092 059/5 1381 PC **A06**/MF **A01**

AD-A092 060/3
Laundry Heat Recovery, USMA, West Point.
AD-A092 060/3 1378 PC **A02**/MF **A01**

AD-A092 061/1
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333 PC **A02**/MF **A01**

AD-A092 062/9
Propagation, Scattering, and Reflection of Waves in Continuous and Random Inhomogeneous Media, and Nonlinear Boundary Value Problems.
AD-A092 062/9 1436 PC **A02**/MF **A01**

AD-A092 063/7
Army Aviation Maintenance Career Management Field 67 Study.
AD-A092 063/7 1304 PC **A20**/MF **A01**

AD-A092 064/5
Reprint: Click Sounds from Animals at Sea.
AD-A092 064/5 1340 PC **A02**/MF **A01**

AD-A092 065/2
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407 PC **A22**/MF **A01**

AD-A092 066/0
Division Real Time Applications Report (DIVRAS).
AD-A092 066/0 1402 PC **A13**/MF **A01**

AD-A092 067/8
Division Real Time Applications Report (DIVRAS), Software Functional Description.
AD-A092 067/8 1354 PC **A08**/MF **A01**

AD-A092 068/6
Infrared Measurement Variability Analysis.
AD-A092 068/6 1411 PC **A05**/MF **A01**

AD-A092 069/4
Gasdynamic Particle Accelerators - An Optimization.
AD-A092 069/4 1395 PC **A03**/MF **A01**

AD-A092 070/2
Functional Capabilities Description (FCD) for the Corps Information Management System (CIMS).
AD-A092 070/2 1297 PC **A03**/MF **A01**

AD-A092 071/0
HIBAL Program Preliminary Warhead-Design. Volume I.
AD-A092 071/0 1432 PC **A09**/MF **A01**

AD-A092 072/8
HIBAL Program. Preliminary Warhead-Design. Volume II. Appendices.
AD-A092 072/8 1432 PC **A06**/MF **A01**

AD-A092 073/6
Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450 PC **A02**/MF **A01**

AD-A092 074/4
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449 PC **A03**/MF **A01**

AD-A092 075/1
Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354 PC **A02**/MF **A01**

AD-A092 076/9
Burn-In of Uncased Semiconductors. A Feasibility Study.
AD-A092 076/9 1351 PC **A04**/MF **A01**

AD-A092 077/7
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412 PC **A07**/MF **A01**

AD-A092 078/5
Manufacturing Methods and Technology Measure for Fabrication of Silicon Transcalent Rectifier.
AD-A092 078/5 1351 PC **A07**/MF **A01**

AD-A092 079/3
Manufacturing Methods and Technology (MM&T) Measure for Fabrication of Silicon Transcalent Transistor.
AD-A092 079/3 1351 PC **A07**/MF **A01**

AD-A092 080/1
Reprint: Geostrophic Vorticity Balance in Midocean.
AD-A092 080/1 1341 PC **A02**/MF **A01**

AD-A092 081/9
Reprint: Oblique Anhysteretic Remanent Magnetization.
AD-A092 081/9 1349 PC **A02**/MF **A01**

AD-A092 082/7
Reprint: Acoustics and the Behavior of Sperm Whales.
AD-A092 082/7 1340 PC **A02**/MF **A01**

AD-A092 083/5
Reprint: Seasonal and Solar Cycle Variations of Equatorial Spread-F in the American Zone.
AD-A092 083/5 1293 PC **A02**/MF **A01**

AD-A092 084/3
Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
AD-A092 084/3 1293 PC **A02**/MF **A01**

AD-A092 085/0
Reprint: Lack of Diagnostic Utility of Febrile Agglutinin Screens.
AD-A092 085/0 1318 PC **A02**/MF **A01**

AD-A092 086/8
Reprint: A Test of Two Theories for the Low-Frequency Cutoffs of Nonthermal Continuum Radiation.
AD-A092 086/8 1293 PC **A02**/MF **A01**

AD-A092 087/6
Reprint: Influence of Temperature on Complement-Dependent Immune Damage to Lipsomes.
AD-A092 087/6 1318 PC **A02**/MF **A01**

AD-A092 088/4
Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450 PC **A02**/MF **A01**

AD-A092 089/2
Investigations of Sea Ice Anisotropy, Electromagnetic Properties, Strength, and Under-Ice Current Orientation,
AD-A092 089/2 1349 PC **A03**/MF **A01**

AD-A092 090/0
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 1--Translation.
AD-A092 090/0 1318 PC **A22**/MF **A01**

AD-A092 091/8
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 2--Translation.
AD-A092 091/8 1318 PC **A22**/MF **A01**

AD-A092 092/6
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 3--Translation.
AD-A092 092/6 1318 PC **A22**/MF **A01**

AD-A092 093/4
Experience of Soviet Medicines in a Great Patriotic War, 1941-1945. Volume 16, Section 4--Translation.
AD-A092 093/4 1318 PC **A21**/MF **A01**

AD-A092 094/2
Analysis of Combustion and Heat Transfer in a Porous Graphite Medium.
AD-A092 094/2 1368 PC **A08**/MF **A01**

AD-A092 095/9
Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings--Translation.
AD-A092 095/9 1351 PC **A02**/MF **A01**

AD-A092 096/7
Laser Light Fiber Communication--Translation.
AD-A092 096/7 1407 PC **A02**/MF **A01**

AD-A092 097/5
A 20 Years' Survey of Laser Science and Technology in China. II--Translation.
AD-A092 097/5 1439 PC **A03**/MF **A01**

AD-A092 099/1
Ways for Providing a High-Speed Analog-to-Digital Converter with Wide Dynamic Range--Translation.
AD-A092 099/1 1359 PC **A02**/MF **A01**

AD-A092 100/7
New Principles in Weapons--Translation.
AD-A092 100/7 1402 PC **A02**/MF **A01**

AD-A092 103/1
POSER - A Process Organisation to Simplify Error Recovery,
AD-A092 103/1 1354 PC **A02**/MF **A01**

AD-A092 104/9
Microwave Frequency Memory,
AD-A092 104/9 1354 PC **A02**/MF **A01**

AD-A092 105/6
The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
AD-A092 105/6 1373 PC **A04**/MF **A01**

AD-A092 106/4
Soldier Satisfaction with Life in Restructured Units during Phase I of the Restructuring of the Heavy Division Test.
AD-A092 106/4 1308 PC **A03**/MF **A01**

AD-A092 107/2
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326 PC **A02**/MF **A01**

AD-A092 108/0
Personnel Management in the All-Volunteer Force Study.

AD-A092 108/0 1304 PC A03/MF A01

AD-A092 109/8

Evaluation/Redesign of the F-105 Pitch Rate Gyro Pack.
AD-A092 109/8 1412 PC A02/MF A01

AD-A092 110/6

Experimental Dune Restoration and Stabilization, Nauset Beach, Cape Cod, Massachusetts.
AD-A092 110/6 1340 PC A03/MF A01

AD-A092 111/4

Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
AD-A092 111/4 1359 PC A03/MF A01

AD-A092 112/2

1980 Summer Study on Statistical Techniques in Army Testing.
AD-A092 112/2 1375 PC A02/MF A01

AD-A092 113/0

Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
AD-A092 113/0 1408 PC A03/MF A01

AD-A092 114/8

Performance of ANDVT HF Modem with Peak Clipping.
AD-A092 114/8 1408 PC A03/MF A01

AD-A092 115/5

Reprint: General Morphology and Sediment Patterns in Tidal Inlets.
AD-A092 115/5 1341 Not available NTIS

AD-A092 116/3

Reprint: Response to Fertilization by Various Plant Growth Forms in an Alaskan Tundra: Nutrient Accumulation and Growth.
AD-A092 116/3 1316 Not available NTIS

AD-A092 117/1

Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373 Not available NTIS

AD-A092 118/9

Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
AD-A092 118/9 1333 Not available NTIS

AD-A092 119/7

Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
AD-A092 119/7 1333 Not available NTIS

AD-A092 120/5

Reprint: Spectral Domain Analysis of Dominant and Higher Order Modes in Fin-Lines.
AD-A092 120/5 1351 Not available NTIS

AD-A092 121/3

Reprint: Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source.
AD-A092 121/3 1294 Not available NTIS

AD-A092 122/1

Reprint: Threshold Effect on Error Probability in QAM Systems.
AD-A092 122/1 1408 PC A02/MF A01

AD-A092 123/9

Reprint: Memoryless Quantizer-Detectors for Constant Signals in m-Dependent Noise.
AD-A092 123/9 1358 PC A02/MF A01

AD-A092 124/7

Reprint: Optimal Design of FIR Digital Filters with Monotone Passband Response.
AD-A092 124/7 1359 PC A02/MF A01

AD-A092 125/4

AGARD Index of Publications, 1977 - 1979.
AD-A092 125/4 1402 PC A19/MF A01

AD-A092 126/2

An Evaluation of the Application of ISD to P-3 Pilot Training.
AD-A092 126/2 1304 PC A04/MF A01

AD-A092 127/0

Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440 PC A02/MF A01

AD-A092 128/8

A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358 PC A04/MF A01

AD-A092 129/6

Pilot Automated Influence Diagram Decision Aid.
AD-A092 129/6 1308 PC A05/MF A01

AD-A092 130/4

A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373 PC A02/MF A01

AD-A092 131/2

Reprint: A Note on Variable Recursive Digital Filters.
AD-A092 131/2 1359 PC A02/MF A01

AD-A092 132/0

Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381 PC A06/MF A01

AD-A092 133/8

Documentation for an Improved Version of HULIMP, A Ship Hull Improvement Computer Program Based on the Baba Theory.
AD-A092 133/8 1392 PC A03/MF A01

AD-A092 134/6

A Statistical Study of Monthly Storminess and Sea Surface Temperature Anomalies over the North Pacific Ocean.
AD-A092 134/6 1349 PC A05/MF A01

AD-A092 135/3

An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456 PC A04/MF A01

AD-A092 136/1

Radio Direction Finding on High Frequency Short Duration Signals.
AD-A092 136/1 1410 PC A08/MF A01

AD-A092 137/9

Design of a System Initialization Mechanism for a Multiple Microcomputer.
AD-A092 137/9 1354 PC A06/MF A01

AD-A092 138/7

Validation of a Two-Dimensional Primitive Variable Computer Code for Flow Fields in Jet Engine Test Cells.
AD-A092 138/7 1454 PC A05/MF A01

AD-A092 139/5

Improvement in Tropical Cyclone Forecasts by Multiple Linear Regression Equation Adjustment of Analog Tracks.
AD-A092 139/5 1294 PC A03/MF A01

AD-A092 140/3

Measurement of Performance Parameters for a FLIR Thermal Imaging System.
AD-A092 140/3 1411 PC A03/MF A01

AD-A092 141/1

Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357 PC A06/MF A01

AD-A092 142/9

Rapid Melting and Solidification of a Surface Due to a Moving Heat Flux.
AD-A092 142/9 1451 PC A04/MF A01

AD-A092 143/7

FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
AD-A092 143/7 1421 PC A04/MF A01

AD-A092 144/5

The Gulf Stream Meanders Experiment. Hydrographic Data Report. R/V Endeavor Cruises, EN-040 (2-8 August 1979) EN-045 (16-23 November 1979).
AD-A092 144/5 1349 PC A09/MF A01

AD-A092 145/2

Assessment of Non-Invasive Methods of Measuring Bone Repair in Naval Casualty Victims.
AD-A092 145/2 1318 PC A02/MF A01

AD-A092 146/0

Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.
AD-A092 146/0 1355 PC A04/MF A01

AD-A092 147/8

The SOTAS-Scout-AAH/HELLFIRE System.
AD-A092 147/8 1288 PC A03/MF A01

AD-A092 148/6

A Mass-Spectrometric Investigation of Chemical Aspects of Several Energetic Propellants and Explosives.
AD-A092 148/6 1456 PC A04/MF A01

AD-A092 149/4

Effective Shear Modulus for Flexural and Extensional Waves in an Unloaded Thick Plate.
AD-A092 149/4 1449 PC A04/MF A01

AD-A092 150/2

Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351 PC A02/MF A01

AD-A092 151/0

Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411 PC A04/MF A01

AD-A092 152/8

Satellite Measurements of Atmospheric Aerosols.
AD-A092 152/8 1293 PC A03/MF A01

AD-A092 153/6

Architecture for Higher Level Digital Image Processing.
AD-A092 153/6 1355 PC A03/MF A01

AD-A092 154/4

Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403 PC A05/MF A01

AD-A092 155/1

An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
AD-A092 155/1 1309 PC A07/MF A01

AD-A092 156/9

The Security of Pakistan: A Trip Report.
AD-A092 156/9 1302 PC A04/MF A01

AD-A092 157/7

Energy Use in Transportation. Selected References.
AD-A092 157/7 1361 PC A05/MF A01

AD-A092 158/5

Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
AD-A092 158/5 1392 PC A04/MF A01

AD-A092 159/3

Problems and Alternatives in the Combat Rescue of Navy Aircrewmen.
AD-A092 159/3 1323 PC A04/MF A01

AD-A092 160/1

Annotated Bibliography of Reports. Supplement Number 11, 1 October 1978 - 30 September 1979.
AD-A092 160/1 1318 PC A02/MF A01

AD-A092 161/9

Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1383 PC A04/MF A01

AD-A092 162/7

Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.
AD-A092 162/7 1333 PC A02/MF A01

AD-A092 163/5

Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.
AD-A092 163/5 1375 PC A08/MF A01

AD-A092 164/3

Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
AD-A092 164/3 1400 PC A05/MF A01

AD-A092 165/0

Williams Air Force Base Air Quality Monitoring Study.
AD-A092 165/0 1381 PC A05/MF A01

AD-A092 166/8

Security Assistance Data Element Catalog (SADEC).
AD-A092 166/8 1355 PC A04/MF A01

AD-A092 167/6

Integrated Logistic Support. Implementation Guide for DoD Systems and Equipments.
AD-A092 167/6 1401 MF A01

AD-A092 168/4

Defense Planning and Arms Control. Proceedings of a Special NSAI Conference, 12-14 June 1980, National Defense University, Washington, DC.
AD-A092 168/4 1400 PC A08/MF A01

AD-A092 169/2

Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369 PC A02/MF A01

AD-A092 170/0

National Dam Safety Program. Wappingers Falls Dam (I.D. Number N.Y. 3, D.E.C. 613A), Hudson River Basin, Dutchess County, New York. Phase I Inspection Report.
AD-A092 170/0 1381 MF A01

AD-A092 171/8

Wideband Speech Multiple Rate Processor Study. Part I.
AD-A092 171/8 1408 PC A03/MF A01

AD-A092 172/6

Wideband Speech Multiple Rate Processor Study. Part II.
AD-A092 172/6 1408 PC A03/MF A01

AD-A092 173/4

A Coordination, Education, and Mitigation Model for Disaster Preparedness in Coastal Areas.
AD-A092 173/4 1309 PC A03/MF A01

AD-A092 174/2

Safety Evaluation of Fire Control Systems - Electrical and Electronic Equipment.
AD-A092 174/2 1435 PC A03/MF A01

AD-A092 175/9

PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438 PC A25/MF A01

AD-A092 176/7

Approximate Linear Regulator and Kalman Filter.
AD-A092 176/7 1376 PC A07/MF A01

AD-A092 177/5

Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304 PC A99/MF A01

AD-A092 178/3

A Case Study Anlaysis of a System Acquisition by a Field Activity.
AD-A092 178/3 1296 PC A07/MF A01

AD-A092 179/1

Homosexuality and the U.S. Military.
AD-A092 179/1 1308 PC A07/MF A01

AD-A092 180/9

Design and Implementation of an Integrated Screen-Oriented Text Editing and Formatting System.
AD-A092 180/9 1297 PC A08/MF A01

AD-A092 181/7
Nonresonant Acoustic Projector Project. Mechanical 5-50 Hz Device Provides Stable Underwater Acoustic Output with Frequency and Amplitude Controllable and Independent of Depth.
AD-A092 181/7 1406 PC **A03**/MF **A01**

AD-A092 182/5
PASM: A Reconfigurable Multimicrocomputer System for Image Processing.
AD-A092 182/5 1355 PC **A02**/MF **A01**

AD-A092 183/3
Gas Surface Dynamics, High Power Laser-Solid Interactions.
AD-A092 183/3 1333 PC **A02**/MF **A01**

AD-A092 184/1
Approximation Techniques for Parameter Estimation in Hereditary Control Systems.
AD-A092 184/1 1376 PC **A02**/MF **A01**

AD-A092 185/8
On Schur Optimality.
AD-A092 185/8 1376 PC **A03**/MF **A01**

AD-A092 186/6
Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
AD-A092 186/6 1369 PC **A02**/MF **A01**

AD-A092 187/4
Reprint: Stochastic Control Under Partial Observations.
AD-A092 187/4 1376 PC **A02**/MF **A01**

AD-A092 188/2
Nonlinear Semigroup for Controlled Partially Observed Diffusions.
AD-A092 188/2 1376 PC **A03**/MF **A01**

AD-A092 189/0
One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
AD-A092 189/0 1333 PC **A02**/MF **A01**

AD-A092 190/8
Construction of PBIB Designs with Triangular and L2 Schemes.
AD-A092 190/8 1376 PC **A02**/MF **A01**

AD-A092 191/6
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376 PC **A03**/MF **A01**

AD-A092 192/4
Assessing Risks through the Determination of Rare Event Probabilities.
AD-A092 192/4 1376 PC **A03**/MF **A01**

AD-A092 193/2
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287 PC **A04**/MF **A01**

AD-A092 194/0
Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368 PC **A02**/MF **A01**

AD-A092 195/7
Implementation of the Phase Difference Trace Function for a Circular Array.
AD-A092 195/7 1407 PC **A04**/MF **A01**

AD-A092 196/5
The Enrichment of Smoler's Model of Land Combat.
AD-A092 196/5 1403 PC **A05**/MF **A01**

AD-A092 197/3
Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368 PC **A03**/MF **A01**

AD-A092 198/1
Efficient Coding of the Prediction Residual.
AD-A092 198/1 1408 PC **A10**/MF **A01**

AD-A092 199/9
Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376 PC **A07**/MF **A01**

AD-A092 200/5
MILES Pressure/Seismic Response Engineering Development of MILES Test Fixture.
AD-A092 200/5 1400 MF **A01**

AD-A092 201/3
Economic Sanctions in the 1990's,
AD-A092 201/3 1302 PC **A02**/MF **A01**

AD-A092 202/1
Futures Group Periodic Report-3,
AD-A092 202/1 1302 PC **A03**/MF **A01**

AD-A092 203/9
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
AD-A092 203/9 1309 PC **A10**/MF **A01**

AD-A092 204/7
Evaluation of the Scott Aviox Emergency Oxygen System during a Rapid Decompression to 25,000 Feet,
AD-A092 204/7 1323 PC **A02**/MF **A01**

AD-A092 205/4
Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408 PC **A05**/MF **A01**

AD-A092 206/2
Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408 PC **A05**/MF **A01**

AD-A092 207/0
User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403 PC **A03**/MF **A01**

AD-A092 208/8
Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408 PC **A08**/MF **A01**

AD-A092 209/6
USAWC Coronary Risk and Fitness Analysis.
AD-A092 209/6 1318 PC **A10**/MF **A01**

AD-A092 210/4
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394 PC **A07**/MF **A01**

AD-A092 211/2
Carbon Dioxide Activation; Formation of trans- (Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333 PC **A02**/MF **A01**

AD-A092 212/0
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439 PC **A03**/MF **A01**

AD-A092 213/8
UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
AD-A092 213/8 1333 PC **A03**/MF **A01**

AD-A092 214/6
Late Time Containment.
AD-A092 214/6 1421 PC **A05**/MF **A01**

AD-A092 215/3
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447 PC **A03**/MF **A01**

AD-A092 216/1
Considerations for an Assembler Scheduled Multi-Microprocessor System.
AD-A092 216/1 1355 MF **A01**

AD-A092 217/9
The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
AD-A092 217/9 1294 PC **A07**/MF **A01**

AD-A092 218/7
National Dam Safety Program. Lookover Lake Dam (NJ00565), Hudson River Basin, Longhouse Brook, Passaic, County, New Jersey. Phase I Inspection Report.
AD-A092 218/7 1381 MF **A01**

AD-A092 219/5
National Dam Safety Program. Tivoli Lake Dam (Inventory Number N.Y. 52), Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 219/5 1381 MF **A01**

AD-A092 220/3
National Dam Safety Program. Lake Suzanne (Inventory Number N.Y. 760) Hudson River Basin, Rockland County, New York. Phase I Inspection Report,
AD-A092 220/3 1382 MF **A01**

AD-A092 221/1
An Approach to Regenerative Simulation on a General State Space.
AD-A092 221/1 1376 PC **A05**/MF **A01**

AD-A092 222/9
Photocatalytic Reaction of Water with Carbon over Platinized Titania.
AD-A092 222/9 1333 PC **A02**/MF **A01**

AD-A092 223/7
On the Photoassisted Hydrogen Production from Titania and Water.
AD-A092 223/7 1333 PC **A02**/MF **A01**

AD-A092 224/5
Automated Reading of Videotape.
AD-A092 224/5 1355 PC **A04**/MF **A01**

AD-A092 225/2
National Dam Safety Program. Beaver Dam Lake (Inventory Number N.Y. 619), Hudson River Basin, Orange County, New York. Phase I Inspection Report,
AD-A092 225/2 1382 MF **A01**

AD-A092 226/0
Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358 MF **A01**

AD-A092 227/8
National Dam Safety Program. Harrower Pond Dam (Inventory Number NY207), Mohawk River Basin, Montgomery County, New York. Phase I Inspection Report,
AD-A092 227/8 1382 MF **A01**

AD-A092 228/6
A Guidance Document on Airport Noise Control.
AD-A092 228/6 1290 PC **A08**/MF **A01**

AD-A092 229/4
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
AD-A092 229/4 1454 PC **A04**/MF **A01**

AD-A092 230/2
Design and Analysis of Relational Join Operations of a Database Computer (DBC).
AD-A092 230/2 1355 PC **A05**/MF **A01**

AD-A092 231/0
Composition and Characteristics of Particles in the Ocean: Evidence for Present Day Resuspension.
AD-A092 231/0 1349 PC **A11**/MF **A01**

AD-A092 232/8
Summaries of Research, Fiscal Year 1980.
AD-A092 232/8 1318 PC **A03**/MF **A01**

AD-A092 233/6
Analogical Processes in Learning.
AD-A092 233/6 1308 PC **A03**/MF **A01**

AD-A092 234/4
Detailed Modelling of Combustion Systems.
AD-A092 234/4 1452 PC **A11**/MF **A01**

AD-A092 235/1
Ratemeter Directional Dependence, Radiac.
AD-A092 235/1 1421 PC **A02**/MF **A01**

AD-A092 236/9
Cooling Systems (Automotive).
AD-A092 236/9 1434 PC **A02**/MF **A01**

AD-A092 237/7
Corps of Engineers Hydraulic Design Criteria. Volume I.
AD-A092 237/7 1382 PC **A14**/MF **A01**

AD-A092 238/5
Corps of Engineers Hydraulic Design Criteria. Volume 2.
AD-A092 238/5 1382 PC **A08**/MF **A01**

AD-A092 239/3
Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333 PC **A03**/MF **A01**

AD-A092 240/1
The Need for Airport Noise Monitoring Systems. Their Uses, and Value in Promoting Civil Aviation.
AD-A092 240/1 1290 PC **A03**/MF **A01**

AD-A092 241/9
Molecular Fraction Behavior in Oriented Polymers.
AD-A092 241/9 1373 PC **A07**/MF **A01**

AD-A092 242/7
EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300 PC **A05**/MF **A01**

AD-A092 243/5
Manufacturing Methods and Technology Program Plan, CY 1980.
AD-A092 243/5 1390 PC **A11**/MF **A01**

AD-A092 244/3
The Neumann Solution Applied to Soil Systems,
AD-A092 244/3 1350 PC **A02**/MF **A01**

AD-A092 245/0
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368 PC **A04**/MF **A01**

AD-A092 246/8
Analysis of Wake Survey Experimental Data for Model 5365 Representing the R/V ATHENA in the DTNSRDC Towing Tank.
AD-A092 246/8 1392 PC **A10**/MF **A01**

AD-A092 247/6
The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
AD-A092 247/6 1369 PC **A03**/MF **A01**

AD-A092 248/4
A Population of Linear, Second Order, Elliptic Partial Differential Equations on Rectangular Domains. Part 1.
AD-A092 248/4 1376 PC **A03**/MF **A01**

AD-A092 249/2
Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
AD-A092 249/2 1328 PC **A03**/MF **A01**

AD-A092 250/0
Maintenance Productivity.
AD-A092 250/0 1296 PC **A08**/MF **A01**

AD-A092 251/8
An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367 PC **A03**/MF **A01**

AD-A092 252/6
Disinfection of Viruses in Water by Ozone.
AD-A092 252/6 1318 PC **A04**/MF **A01**

AD-A092 253/4
Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
AD-A092 253/4 1367 PC **A03**/MF **A01**

AD-A092 254/2
Convergence Theory for Unconstrained Minimization,
AD-A092 254/2 1376 PC **A02**/MF **A01**

AD-A092 255/9
AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455 PC **A04**/MF **A01**

AD-A092 256/7
Semiantichains and Unichain Coverings in Direct Products of Partial Orders.
AD-A092 256/7 1377 PC **A02**/MF **A01**

AD-A092 257/5
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288 PC **A07**/MF **A01**

AD-A092 258/3
Comparative Histopathology of Acanthocephalan Infections in Some Freshwater Fishes.
AD-A092 258/3 1316 PC **A04**/MF **A01**

AD-A092 259/1
A Manual for Encoding Probability Distributions.
AD-A092 259/1 1378 PC **A11**/MF **A01**

AD-A092 260/9
An ADA Language Model of the AN/SPY-1A Component of the AEGIS Weapon System.
AD-A092 260/9 1412 PC **A03**/MF **A01**

AD-A092 261/7
Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377 PC **A02**/MF **A01**

AD-A092 262/5
Manufacturing Methods and Technology Program Accomplishments.
AD-A092 262/5 1390 PC **A06**/MF **A01**

AD-A092 263/3
Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308 PC **A10**/MF **A01**

AD-A092 264/1
Theoretical Studies of Low-Loss Optical Fibers.
AD-A092 264/1 1440 PC **A10**/MF **A01**

AD-A092 265/8
Design and Implementation of Multi-Input Adaptive Signal Extractions.
AD-A092 265/8 1355 PC **A04**/MF **A01**

AD-A092 266/6
MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.
AD-A092 266/6 1304 PC **A03**/MF **A01**

AD-A092 267/4
MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan.
AD-A092 267/4 1304 PC **A04**/MF **A01**

AD-A092 268/2
Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
AD-A092 268/2 1328 PC **A04**/MF **A01**

AD-A092 269/0
Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331 PC **A04**/MF **A01**

AD-A092 270/8
Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331 PC **A03**/MF **A01**

AD-A092 271/6
Radiac Ratemeter Calibration Accuracy.
AD-A092 271/6 1421 PC **A02**/MF **A01**

AD-A092 272/4
Use of a Microprocessor to Implement an ADCCP Protocol (Federal Standard 1003).
AD-A092 272/4 1408 PC **A06**/MF **A01**

AD-A092 273/2
Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370 PC **A04**/MF **A01**

AD-A092 274/0
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342 PC **A03**/MF **A01**

AD-A092 275/7
Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
AD-A092 275/7 1304 PC **A04**/MF **A01**

AD-A092 276/5
Evaluation of a Meteorological Airborne Pulse Doppler Radar.
AD-A092 276/5 1412 PC **A03**/MF **A01**

AD-A092 277/3
Analytical Model for the Turning of Tracked Vehicles in Soft Soils.
AD-A092 277/3 1434 PC **A04**/MF **A01**

AD-A092 278/1
Exchange Service Station Gasoline Pumping Operation Simulation.
AD-A092 278/1 1378 PC **A07**/MF **A01**

AD-A092 279/9
Human Resource Management in the Navy: The Specialists' Viewpoint.
AD-A092 279/9 1304 PC **A04**/MF **A01**

AD-A092 280/7
RTC CREDO: Initial Assessment.
AD-A092 280/7 1304 PC **A06**/MF **A01**

AD-A092 281/5
The Iranian Revolution and Its Impact on the Future of Soviet-Iranian Relations: An Assessment.
AD-A092 281/5 1302 PC **A12**/MF **A01**

AD-A092 282/3
Production Rule Systems as an Approach to Interpretation of Ground Sensor Information.
AD-A092 282/3 1355 PC **A12**/MF **A01**

AD-A092 283/1
The Legacy of Ideology in Soviet Foreign Policy Toward the West.
AD-A092 283/1 1302 PC **A10**/MF **A01**

AD-A092 284/9
Legionella Pneumophila and TATLOCK Bacterium: Simple, Effective Giemsa Stain.
AD-A092 284/9 1318 PC **A02**/MF **A01**

AD-A092 285/6
Plasma Disappearance, Urine Excretion and Tissue Distribution of Ribavirin in Rats and Rhesus Monkeys.
AD-A092 285/6 1325 PC **A03**/MF **A01**

AD-A092 286/4
A Rapid and Sensitive Method for the Quantitation of Legionella Pneumophila Antigen from Human Urine.
AD-A092 286/4 1318 PC **A02**/MF **A01**

AD-A092 287/2
The Identification of a Legionella Pneumophila Toxin with IN VIVO Lethality.
AD-A092 287/2 1318 PC **A02**/MF **A01**

AD-A092 288/0
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality.
AD-A092 288/0 1327 PC **A03**/MF **A01**

AD-A092 289/8
Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
AD-A092 289/8 1373 PC **A03**/MF **A01**

AD-A092 290/6
Predictive Models of Human Visual Processes in Aerosystems.
AD-A092 290/6 1308 PC **A05**/MF **A01**

AD-A092 291/4
Exhaust Emission Characteristics and Variability for Maintained General Electric CF6-50 Turbofan Engines.
AD-A092 291/4 1455 PC **A04**/MF **A01**

AD-A092 292/2
Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
AD-A092 292/2 1288 PC **A06**/MF **A01**

AD-A092 293/0
The Design, Development, Demonstration and Transfer of Advanced Command and Control (C2) Computer-Based Systems.
AD-A092 293/0 1356 PC **A05**/MF **A01**

AD-A092 294/8
A Hypothetical Monologue Illustrating the Knowledge Underlying Program Analysis.
AD-A092 294/8 1356 PC **A03**/MF **A01**

AD-A092 295/5
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305 PC **A06**/MF **A01**

AD-A092 296/3
National Dam Safety Program. Patterson, Brixius, Grey Creek Watershed Project, Site 1 (Inventory Number NY698), Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 296/3 1382 MF **A01**

AD-A092 297/1
Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452 PC **A18**/MF **A01**

AD-A092 298/9
Reprint: Image Restoration by Short Space Spectral Subtraction.
AD-A092 298/9 1358 Not available NTIS

AD-A092 299/7
An Economic and Technical Study on the Feasibility of Using Advanced Joining Techniques in Constructing Critical Naval Marine Structures.
AD-A092 299/7 1390 PC **A09**/MF **A01**

AD-A092 300/3
Reflexive Launch Strategies.
AD-A092 300/3 1400 PC **A06**/MF **A01**

AD-A092 301/1
Detailed Design of the Kernel of a Real-Time Multiprocessor Operating System.
AD-A092 301/1 1356 PC **A07**/MF **A01**

AD-A092 302/9
Calculation of the Oxide Growth Rate of 2-1/4 Cr - 1 Mo Steel in Air and the Subsequent Measurement of the Strain Required to Crack the Oxide.
AD-A092 302/9 1370 PC **A04**/MF **A01**

AD-A092 303/7
An Application of Kalman Filtering to Torpedo Tracking.
AD-A092 303/7 1407 PC **A07**/MF **A01**

AD-A092 304/5
An Interactive Code for a Pressurized Water Reactor Incorporating Temperature and Xenon Feedback.
AD-A092 304/5 1427 PC **A05**/MF **A01**

AD-A092 305/2
Concept Evaluation: Field Feedback Computation of Electromagnetic Scattering.
AD-A092 305/2 1452 PC **A07**/MF **A01**

AD-A092 306/0
Measurement of Pumped Superluminal Electromagnetic Radiation.
AD-A092 306/0 1441 PC **A04**/MF **A01**

AD-A092 307/8
An Investigation of Unipolar Arcing Damage on Stainless Steel and Titanium Carbide Coated Surfaces.
AD-A092 307/8 1368 PC **A05**/MF **A01**

AD-A092 308/6
A General Retention Model Applied to the Naval Aviator.
AD-A092 308/6 1305 PC **A03**/MF **A01**

AD-A092 309/4
Thermal Analysis and Design of Air Cooled Electronic Circuit Boards Using a Desktop Computer.
AD-A092 309/4 1359 PC **A07**/MF **A01**

AD-A092 310/2
Type II Forward Storage Site Facilities. POMCUS System. Volume 1.
AD-A092 310/2 1401 PC **A99**/MF **A01**

AD-A092 311/0
An Investigation of HF Direction-Finding Accuracy on the Churchill-Ottawa Auroral Zone Path.
AD-A092 311/0 1410 PC **A03**/MF **A01**

AD-A092 312/8
An Investigation of HF Direction-Finding Accuracy on the Frobisher Bay-Ottawa Auroral Zone Path.
AD-A092 312/8 1410 PC **A03**/MF **A01**

AD-A092 313/6
Review of the Strength and Capacity Data for Manual Material Handling Activities.
AD-A092 313/6 1324 PC **A11**/MF **A01**

AD-A092 314/4
MK 11 and MK 12 CO2 Scrubber Development.
AD-A092 314/4 1323 PC **A06**/MF **A01**

AD-A092 315/1
Failure Rates for Fiber Optic Assemblies.
AD-A092 315/1 1440 PC **A06**/MF **A01**

AD-A092 316/9
Airborne Antenna Pattern Code User's Manual.
AD-A092 316/9 1359 PC **A06**/MF **A01**

AD-A092 317/7
Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333 PC **A03**/MF **A01**

AD-A092 318/5
Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
AD-A092 318/5 1413 PC **A06**/MF **A01**

AD-A092 319/3
Pre-Expended Bin Material Management at Naval Air Rework Facilities.
AD-A092 319/3 1401 PC **A04**/MF **A01**

AD-A092 320/1
Power FET Contact Technology.
AD-A092 320/1 1351 PC **A05**/MF **A01**

AD-A092 321/9
Department of Defense In-House RDT&E Activities.
AD-A092 321/9 1296 PC **A08**/MF **A01**

AD-A092 322/7
Chemiluminescence of Secondary Peroxyesters.
AD-A092 322/7 1334 PC **A03**/MF **A01**

AD-A092 323/5
Facile Cleavage of the Mo=Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334 PC **A02**/MF **A01**

AD-A092 324/3
Reprint: Eddies Off the Somali Coast During the Southwest Monsoon.
AD-A092 324/3 1341 PC **A02**/MF **A01**

AD-A092 325/0
Reprint: Flow Structures of the Benthic Ocean.
AD-A092 325/0 1341 PC **A02**/MF **A01**

AD-A092 326/8
Reprint: Migration Rate of Mud Bacteria as a Function of Magnetic Field Strength.
AD-A092 326/8 1340 PC **A02**/MF **A01**

AD-A092 327/6
Reprint: Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.

NTIS ORDER/REPORT NUMBER INDEX

AD-A092 327/6 1341 PC **A03**/MF **A01**

AD-A092 328/4
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316 PC **A02**/MF **A01**

AD-A092 329/2
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318 PC **A02**/MF **A01**

AD-A092 330/0
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319 PC **A02**/MF **A01**

AD-A092 331/8
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319 PC **A02**/MF **A01**

AD-A092 332/6
Reprint: Raman Spectra of SiF4 and GeF4 Crystals.
AD-A092 332/6 1334 Not available NTIS

AD-A092 333/4
Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
AD-A092 333/4 1334 Not available NTIS

AD-A092 334/2
Reprint: On the Jahn-Teller Effect in ReF6.
AD-A092 334/2 1334 Not available NTIS

AD-A092 335/9
Reprint: Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State.
AD-A092 335/9 1334 Not available NTIS

AD-A092 336/7
Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
AD-A092 336/7 1334 Not available NTIS

AD-A092 337/5
Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
AD-A092 337/5 1334 Not available NTIS

AD-A092 338/3
Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
AD-A092 338/3 1334 Not available NTIS

AD-A092 339/1
Reprint: A Military Community Outbreak of Hepatitis Type A Related to Transmission in a Child Care Facility.
AD-A092 339/1 1319 PC **A02**/MF **A01**

AD-A092 340/9
Reprint: Naloxone Alteration of Physiological Parameters in Spinally Transected Animals.
AD-A092 340/9 1325 PC **A02**/MF **A01**

AD-A092 341/7
Reprint: Opiate-Like Effects of Electroconvulsive Shock in Rats: A Differential Effect of Naloxone on Nociceptive Measures.
AD-A092 341/7 1325 PC **A02**/MF **A01**

AD-A092 342/5
Reprint: Reduction of Heroin Intake in Baboons by an Economic Constraint.
AD-A092 342/5 1325 PC **A02**/MF **A01**

AD-A092 343/3
Reprint: A Comparison of Serum Isoenzyme Levels of Creatine Phosphokinase and Lactic Dehydrogenase in Patients Undergoing Thoracic Operations and Patients Admitted to a Coronary Care Unit.
AD-A092 343/3 1319 PC **A02**/MF **A01**

AD-A092 344/1
Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.
AD-A092 344/1 1435 PC **A03**/MF **A01**

AD-A092 345/8
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395 PC **A04**/MF **A01**

AD-A092 346/6
Strong Blast Wave Computer Programs.
AD-A092 346/6 1435 PC **A04**/MF **A01**

AD-A092 347/4
Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437 PC **A04**/MF **A01**

AD-A092 348/2
Analytical Chemistry of 2,4,6-Trinitrotoluene.
AD-A092 348/2 1432 PC **A03**/MF **A01**

AD-A092 349/0
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377 PC **A03**/MF **A01**

AD-A092 350/8
Tank Wars General Information Manual.
AD-A092 350/8 1434 PC **A02**/MF **A01**

AD-A092 351/6
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436 PC **A02**/MF **A01**

AD-A092 352/4
Interaction Effects of Simultaneous Torsional and Compressional Cyclic Loading of Sand.
AD-A092 352/4 1350 MF **A01**

AD-A092 353/2
An Investigation of Appendage Drag,
AD-A092 353/2 1392 MF **A01**

AD-A092 354/0
New Passivation Methods of GaAs.
AD-A092 354/0 1450 MF **A01**

AD-A092 355/7
Chemically Initiated Electron-Exchange Luminescence.
AD-A092 355/7 1334 PC **A03**/MF **A01**

AD-A092 356/5
On the Free - Energy Relationships for Reversible and Irreversible Electron Transfer Processes.
AD-A092 356/5 1334 PC **A03**/MF **A01**

AD-A092 357/3
Chemiluminescence of Dioxetanone Investigated by Self Consistent Field Theory.
AD-A092 357/3 1334 PC **A02**/MF **A01**

AD-A092 358/1
A Technique for Staining Extracted Teeth: A Research and Teaching Aid for Bleaching.
AD-A092 358/1 1319 PC **A02**/MF **A01**

AD-A092 359/9
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets,
AD-A092 359/9 1324 PC **A02**/MF **A01**

AD-A092 360/7
Sex Differences in Acclimation to a Hot-Dry Environment,
AD-A092 360/7 1327 PC **A02**/MF **A01**

AD-A092 361/5
Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327 PC **A02**/MF **A01**

AD-A092 362/3
Fatigue in Graphite/Epoxy Bolted Joints.
AD-A092 362/3 1388 PC **A04**/MF **A01**

AD-A092 363/1
A New Computer Program for Plant Layout Design - OPDEP Optimal Plant Design and Evaluation Program.
AD-A092 363/1 1390 PC **A05**/MF **A01**

AD-A092 364/9
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290 PC **A05**/MF **A01**

AD-A092 365/6
Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
AD-A092 365/6 1391 PC **A05**/MF **A01**

AD-A092 366/4
Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396 PC **A03**/MF **A01**

AD-A092 367/2
A Study of Filled and Sparse Line Array Beamformers.
AD-A092 367/2 1407 PC **A04**/MF **A01**

AD-A092 368/0
Air Saturation Dive 4 - 8 February 1980, CEDD Test Number 1-80.
AD-A092 368/0 1328 PC **A05**/MF **A01**

AD-A092 369/8
A Study of the Association of Pc 3, 4 Micropulsations with Interplanetary Magnetic Field Orientation & Other Solar Wind Parameters.
AD-A092 369/8 1292 PC **A06**/MF **A01**

AD-A092 370/6
Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
AD-A092 370/6 1305 PC **A05**/MF **A01**

AD-A092 371/4
Signal Processing Circuit Development.
AD-A092 371/4 1411 PC **A04**/MF **A01**

AD-A092 372/2
Determination of the Systematic Bias and Variability of the Error of the National Meteorological Center's Six-Layer Baroclinic Model.
AD-A092 372/2 1295 PC **A04**/MF **A01**

AD-A092 373/0
Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
AD-A092 373/0 1295 PC **A05**/MF **A01**

AD-A092 374/8
Advanced Ship System Concepts for Hydrographic Surveying.
AD-A092 374/8 1392 PC **A04**/MF **A01**

AD-A092 375/5
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
AD-A092 375/5 1432 PC **A02**/MF **A01**

AD-A092 376/3
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334 PC **A03**/MF **A01**

AD-A092 377/1
WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356 PC **A03**/MF **A01**

AD-A092 378/9
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293 PC **A03**/MF **A01**

AD-A092 379/7
QUANTA - Users Manual.
AD-A092 379/7 1403 MF **A01**

AD-A092 380/5
Development of a Two-Piece Mask and Lens and Mold for Same.
AD-A092 380/5 1326 PC **A04**/MF **A01**

AD-A092 381/3
Effect of Response Mode on Target Identification.
AD-A092 381/3 1412 PC **A03**/MF **A01**

AD-A092 382/1
Lifetime Prediction of Organic Coating/Metal System.
AD-A092 382/1 1368 PC **A04**/MF **A01**

AD-A092 383/9
Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455 PC **A02**/MF **A01**

AD-A092 384/7
The Shock and Vibration Digest. Volume 12, Number 11,
AD-A092 384/7 1449 Not available NTIS

AD-A092 385/4
Momentum Distribution of Ions in Plasma Beam.
AD-A092 385/4 1447 PC **A02**/MF **A01**

AD-A092 386/2
Detection, Estimation, and Control on Group Manifolds.
AD-A092 386/2 1377 PC **A02**/MF **A01**

AD-A092 387/0
Characterization of Superconductors by Surface Wave Techniques.
AD-A092 387/0 1450 PC **A03**/MF **A01**

AD-A092 388/8
State Space Models for Gaussian Stochastic Processes.
AD-A092 388/8 1377 PC **A03**/MF **A01**

AD-A092 389/6
Optimal Control of Systems with Uncertainty.
AD-A092 389/6 1377 PC **A02**/MF **A01**

AD-A092 390/4
Forecast of Remote Underwater Sensing Technology.
AD-A092 390/4 1407 PC **A17**/MF **A01**

AD-A092 391/2
Evaluation of a New Thermoplastic Gutta Percha Obturation Technique Using 45Ca.
AD-A092 391/2 1319 PC **A03**/MF **A01**

AD-A092 392/0
Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16,
AD-A092 392/0 1392 PC **A15**/MF **A01**

AD-A092 393/8
Swimming Tests of Wheeled and Tracked Vehicles.
AD-A092 393/8 1434 PC **A02**/MF **A01**

AD-A092 394/6
Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408 PC **A08**/MF **A01**

AD-A092 395/3
Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
AD-A092 395/3 1408 PC **A05**/MF **A01**

AD-A092 396/1
Boston Harbor, Massachusetts Main Report for Debris Removal. Volume I. Revision.
AD-A092 396/1 1382 PC **A12**/MF **A01**

AD-A092 397/9
Boston Harbor, Massachusetts Feasibility Report for Debris Removal. Volume 2. Part A-Debris Inventory. Summary Sheets. Part B - Land Enhancement. Summary Sheets. Revision.
AD-A092 397/9 1382 PC **A14**/MF **A01**

AD-A092 398/7
Final Environmental Impact Statement on Debris Removal from Boston Harbor, Massachusetts. Revision.
AD-A092 398/7 1382 PC **A05**/MF **A01**

AD-A092 399/5
Low Frequency Geomagnetic Fluctuations (.04 to 25 Hz) on Land and on the Floor of Monterey Bay.
AD-A092 399/5 1411 PC **A06**/MF **A01**

AD-A092 400/1
Application of Numerical Optimization to Drive Shaft Design.
AD-A092 400/1 1391 PC **A05**/MF **A01**

AD-A092 401/9
A Study of Budget Formulation in the Fleet Marine Force.

AD-A092 401/9 1296 PC **A07**/MF **A01**

AD-A092 402/7

Brotherhood-in-Arms East German Foreign Policy in Africa 'Kalashnikoffs, not Coca Cola Bring Self-Determination to Angola' Volksarme, 1978.
AD-A092 402/7 1302 PC **A06**/MF **A01**

AD-A092 403/5

An Attempt to Model the USN Unrestricted Line Officer Promotion Process Using an Adapted Length of Service Markov Model.
AD-A092 403/5 1305 MF **A01**

AD-A092 404/3

Dynamic Linking in a Microcomputer Environment.
AD-A092 404/3 1356 PC **A11**/MF **A01**

AD-A092 405/0

An Application of Multidimensional Scaling to the Prioritization of Decision Aids in the S-3A.
AD-A092 405/0 1399 PC **A07**/MF **A01**

AD-A092 406/8

Navy Civilian Careers: A Formulation Problem.
AD-A092 406/8 1305 PC **A06**/MF **A01**

AD-A092 407/6

Experimental Study of Contrast Utilizing a Vidicon.
AD-A092 407/6 1351 PC **A04**/MF **A01**

AD-A092 408/4

A Statistical Analysis of Western North Pacific Ocean Tropical Cyclone Danger Area Forecasts.
AD-A092 408/4 1295 PC **A03**/MF **A01**

AD-A092 409/2

An Application of Case-Mix Adjusted Lengths of Stay in Naval Medical Treatment Facility's Output Measurement.
AD-A092 409/2 1319 PC **A04**/MF **A01**

AD-A092 410/0

Ball Obturation of a Spin Stabilized Tubular Projectile.
AD-A092 410/0 1432 PC **A07**/MF **A01**

AD-A092 411/8

Statistical Adjustment of the Hatrack Typhoon Track Forecasting Model.
AD-A092 411/8 1295 PC **A04**/MF **A01**

AD-A092 412/6

Personal, Situational, and Organizational Determinants of Navy Enlisted Attrition.
AD-A092 412/6 1305 PC **A08**/MF **A01**

AD-A092 413/4

Study of Gas Dynamic Effects in Non-Uniform High Pressure Electrical Discharges.
AD-A092 413/4 1437 PC **A05**/MF **A01**

AD-A092 414/2

Census of U.S. Civil Aircraft, Calendar Year 1978.
AD-A092 414/2 1268 MF **A01**

AD-A092 415/9

Radiation Evaluation of the AM2901A Microprocessor.
AD-A092 415/9 1356 PC **A04**/MF **A01**

AD-A092 416/7

Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432 PC **A05**/MF **A01**

AD-A092 417/5

Coso Monitoring Program.
AD-A092 417/5 1343 PC **A04**/MF **A01**

AD-A092 418/3

Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305 PC **A03**/MF **A01**

AD-A092 419/1

Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
AD-A092 419/1 1334 PC **A07**/MF **A01**

AD-A092 420/9

Dynamic Interactions between the Troposphere and Stratosphere.
AD-A092 420/9 1295 PC **A09**/MF **A01**

AD-A092 421/7

An Analysis of the Problems Involved in the Utilization of Merchant Shipping to Support the U.S. Government during Declared Mobilization Situations.
AD-A092 421/7 1401 PC **A04**/MF **A01**

AD-A092 422/5

The Modernization of the Chinese People's Liberation Army: Goals and Problems.
AD-A092 422/5 1400 PC **A07**/MF **A01**

AD-A092 423/3

An Experimental Study of Solid Propellant Deflagration Using High Speed Motion Pictures and Postfire Residue Analysis.
AD-A092 423/3 1456 PC **A06**/MF **A01**

AD-A092 424/1

A Comparison Study and Software Implementation of NORDA Ocean Models.
AD-A092 424/1 1341 MF **A01**

AD-A092 425/8

Reprint: Influence of Interdental Contacts on Periodontal Status.
AD-A092 425/8 1319 PC **A02**/MF **A01**

AD-A092 426/6

Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295 PC **A02**/MF **A01**

AD-A092 427/4

Reprint: Long-Term Measurements in C2n in the Boundary Layer.
AD-A092 427/4 1295 PC **A02**/MF **A01**

AD-A092 428/2

Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295 PC **A02**/MF **A01**

AD-A092 429/0

Reprint: Clinical Applications of Biofeedback.
AD-A092 429/0 1319 PC **A02**/MF **A01**

AD-A092 430/8

Reprint: The Effect of Errors in Diagnosis and Measurement on the Estimation of the Probability of an Event.
AD-A092 430/8 1377 PC **A02**/MF **A01**

AD-A092 431/6

Reprint: Ship Centerplane Source Distribution.
AD-A092 431/6 1392 PC **A02**/MF **A01**

AD-A092 432/4

Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370 PC **A02**/MF **A01**

AD-A092 433/2

Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370 PC **A02**/MF **A01**

AD-A092 434/0

Cost Impact Assessment of Cost Accounting Practice Changes.
AD-A092 434/0 1296 PC **A11**/MF **A01**

AD-A092 435/7

A Composite Algorithm for Mixed Integer Constrained Nonlinear Optimization.
AD-A092 435/7 1378 PC **A11**/MF **A01**

AD-A092 436/5

Environmental Influences in the Simulation of a Solar Space Heating System.
AD-A092 436/5 1378 PC **A07**/MF **A01**

AD-A092 437/3

A Feasibility Study for Advanced Technology Integration for General Aviation.
AD-A092 437/3 1289 PC **A23**/MF **A01**

AD-A092 438/1

Results of the Solar Cell Experiments aboard the NTS-2 Satellite after 811 Days in Orbit.
AD-A092 438/1 1363 PC **A03**/MF **A01**

AD-A092 439/9

A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293 PC **A08**/MF **A01**

AD-A092 440/7

Analysis of a Simulated Source of Electromagnetic Pulses.
AD-A092 440/7 1452 PC **A04**/MF **A01**

AD-A092 441/5

Diagnostic Software Development for a Real-Time Spectral Analysis System.
AD-A092 441/5 1356 PC **A08**/MF **A01**

AD-A092 442/3

Flow of Technology from the OECD to the U.S.S.R: A Feasibility Study.
AD-A092 442/3 1297 PC **A03**/MF **A01**

AD-A092 443/1

Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287 PC **A09**/MF **A01**

AD-A092 444/9

Kinematic Features of the Large-Scale Mean State Phase II of Gate and Comparison with Phase III Features.
AD-A092 444/9 1295 PC **A05**/MF **A01**

AD-A092 445/6

Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293 PC **A04**/MF **A01**

AD-A092 446/4

Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456 PC **A03**/MF **A01**

AD-A092 447/2

Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456 PC **A03**/MF **A01**

AD-A092 448/0

Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293 PC **A03**/MF **A01**

AD-A092 449/8

Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392 PC **A06**/MF **A01**

AD-A092 450/6

Consolidated Car Display: A Summary Report of the Process and the Results of the Consolidation of Critical and Supplementary Terminal Area Air Traffic Control Information for Display Presentation.
AD-A092 450/6 1412 PC **A03**/MF **A01**

AD-A092 451/4

Interaction of Drugs in the Hyperbaric Environment, Bethesda, Maryland, 13-14 September 1979. The Undersea Medical Workshop (21st).
AD-A092 451/4 1328 PC **A06**/MF **A01**

AD-A092 452/2

National Dam Safety Program. Patterson Brixius Grey Creek Watershed Project, Site 2 (Inventory Number NY 725). Susquehanna River Basin, Broome County, New York. Phase I Inspection Report,
AD-A092 452/2 1382 MF **A01**

AD-A092 453/0

Control, Decontamination and Disposal of Mercury.
AD-A092 453/0 1328 PC **A03**/MF **A01**

AD-A092 454/8

Documentation for the Ship Hydrostatics Computer Program HYDRO.
AD-A092 454/8 1393 PC **A04**/MF **A01**

AD-A092 455/5

Task Force Delay Study. William B. Hartsfield Atlanta International Airport. Volume II.
AD-A092 455/5 1290 PC **A12**/MF **A01**

AD-A092 456/3

Task Force Delay Study. Denver Stapleton International Airport, Volume II.
AD-A092 456/3 1291 PC **A14**/MF **A01**

AD-A092 457/1

Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349 PC **A09**/MF **A01**

AD-A092 458/9

Cost Estimating Procedure for Unmanned Satellites.
AD-A092 458/9 1457 PC **A02**/MF **A01**

AD-A092 459/7

The Effects of the Direction of Control Loading on a One-Dimensional Tracking Task.
AD-A092 459/7 1288 PC **A04**/MF **A01**

AD-A092 460/5

Chemical and Biochemical Studies of PGBX.
AD-A092 460/5 1315 PC **A05**/MF **A01**

AD-A092 461/3

Simple Algorithms for Calculation of Scale Factors for Plan Coordinate Systems (1927 NAD and 1983 NAD).
AD-A092 461/3 1377 PC **A03**/MF **A01**

AD-A092 462/1

Reprint: The Subgenius Persicargas (Ixodoidea; Argasidae; Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
AD-A092 462/1 1316 PC **A02**/MF **A01**

AD-A092 463/9

Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407 PC **A02**/MF **A01**

AD-A092 464/7

Reprint: Critical Layers and the Garrett-Munk Spectrum.
AD-A092 464/7 1342 PC **A02**/MF **A01**

AD-A092 465/4

Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340 PC **A02**/MF **A01**

AD-A092 466/2

Reprint: Retinal Thermal Injury.
AD-A092 466/2 1326 PC **A02**/MF **A01**

AD-A092 467/0

Reprint: Nursing Introspection: Peer Review.
AD-A092 467/0 1319 PC **A02**/MF **A01**

AD-A092 468/8

Reprint: Syntactic Models in Pattern Recognition and Applications.
AD-A092 468/8 1356 Not available NTIS

AD-A092 469/6

Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
AD-A092 469/6 1396 PC **A08**/MF **A01**

AD-A092 470/4

NRL Inertial Confinement Fusion Theory Program 1979 Annual Report, October 1978 - December 1979.
AD-A092 470/4 1414 PC **A04**/MF **A01**

AD-A092 471/2

NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414 PC **A03**/MF **A01**

AD-A092 472/0

Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414 PC **A02**/MF **A01**

AD-A092 473/8

Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
AD-A092 473/8 1370 PC **A03**/MF **A01**

AD-A092 474/6

Program Manual NSUP.

NTIS ORDER/REPORT NUMBER INDEX

AD-A092 474/6 1393 PC **A03**/MF **A01**

AD-A092 475/3

Time-Domain Method for Computing Forces and Moments Acting on Three Dimensional Surface-Piercing Ship Hulls with Forward Speed.
AD-A092 475/3 1393 PC **A03**/MF **A01**

AD-A092 476/1

Concepts for Data Collection in the Arctic.
AD-A092 476/1 1349 PC **A05**/MF **A01**

AD-A092 477/9

MAGLAD. Trainer Engineering Report Demonstration Results.
AD-A092 477/9 1305 PC **A06**/MF **A01**

AD-A092 478/7

Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396 PC **A08**/MF **A01**

AD-A092 479/5

A New Horizontal Gradient, Continuous Flow, Ice Thermal Diffusion Chamber and Detailed Observation of Condensation-Freezing and Deposition Nucleations.
AD-A092 479/5 1294 PC **A07**/MF **A01**

AD-A092 480/3

Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449 PC **A02**/MF **A01**

AD-A092 481/1

Computer-Managed Instruction in the Navy. I. Research Background and Status.
AD-A092 481/1 1305 PC **A02**/MF **A01**

AD-A092 482/9

Studies of Transient Discharges.
AD-A092 482/9 1437 PC **A02**/MF **A01**

AD-A092 483/7

Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342 PC **A02**/MF **A01**

AD-A092 484/5

Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349 PC **A02**/MF **A01**

AD-A092 485/2

Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342 PC **A02**/MF **A01**

AD-A092 486/0

Reprint: On Production and Dissipation of Thermal Variance in the Oceans.
AD-A092 486/0 1349 PC **A02**/MF **A01**

AD-A092 487/8

Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327 PC **A02**/MF **A01**

AD-A092 488/6

Reprint: The Dissociation Energies of Gaseous Praseodymium- and Neodymium-Monoxides and Their Structure.
AD-A092 488/6 1334 PC **A02**/MF **A01**

AD-A092 489/4

Reprint: A Digital Image System for Atmospheric Research.
AD-A092 489/4 1356 Not available NTIS

AD-A092 490/2

Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396 PC **A02**/MF **A01**

AD-A092 491/0

Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292 PC **A02**/MF **A01**

AD-A092 492/8

Reprint: Modification of the Hillig-Charles Theory for Static Fatigue of Glass.
AD-A092 492/8 1367 Not available NTIS

AD-A092 493/6

Reprint: Importance of Crack Tip Radii in Fracture and Fatigue of Glass.
AD-A092 493/6 1367 Not available NTIS

AD-A092 494/4

Reprint: Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body.
AD-A092 494/4 1438 Not available NTIS

AD-A092 495/1

Reprint: Nonlinearly Perturbed Volterra Equations.
AD-A092 495/1 1377 Not available NTIS

AD-A092 496/9

Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367 Not available NTIS

AD-A092 497/7

Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
AD-A092 497/7 1335 Not available NTIS

AD-A092 498/5

Decision Flexibility in a Learning Environment.
AD-A092 498/5 1309 PC **A03**/MF **A01**

AD-A092 499/3

Game Theory, Decision Theory, and Social Choice Theory in the Context of a New Theory of Equity.
AD-A092 499/3 1378 PC **A03**/MF **A01**

AD-A092 500/8

Natural Language Data Base Query.
AD-A092 500/8 1302 PC **A02**/MF **A01**

AD-A092 501/6

Upgrading the AURORA Simulator.
AD-A092 501/6 1452 PC **A03**/MF **A01**

AD-A092 502/4

Unstable-Resonator and Output-Coupling Design Study for Diffraction Radiation Generator Near-Millimeter Sources.
AD-A092 502/4 1439 PC **A03**/MF **A01**

AD-A092 503/2

Comparison of Electron Densities in the Middle Atmosphere Indicated by Rocket Borne Probing Techniques.
AD-A092 503/2 1294 PC **A03**/MF **A01**

AD-A092 504/0

Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294 PC **A02**/MF **A01**

AD-A092 505/7

Reprint: Frequency Dependence of Slant Path Rain Attenuations at 15 and 35 GHZ.
AD-A092 505/7 1413 PC **A02**/MF **A01**

AD-A092 506/5

Reprint: Noble-Gas Broadening of the Sodium D Line Measured by Photon Echoes.
AD-A092 506/5 1335 PC **A02**/MF **A01**

AD-A092 507/3

Reprint: Is First Compound Nucleation at Metal-Semiconductor Interfaces an Electronically Induced Instability.
AD-A092 507/3 1335 Not available NTIS

AD-A092 508/1

Reprint: Planktonic Microfossils and the Recognition of Ancestors.
AD-A092 508/1 1342 PC **A02**/MF **A01**

AD-A950 100/8

Error Analysis of Ruby Radar Cross Section Measurement System.
AD-A950 100/8 1413 MF **A01**

AD-A950 101/6

Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335 Not available NTIS

AD-A950 102/4

Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327 Not available NTIS

AD-A950 103/2

Preliminary Outline of Driver Duties and Tasks for US/FRG MBT-70.
AD-A950 103/2 1434 PC **A06**/MF **A01**

AD-A950 104/0

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section I. Automotive Maintenance.
AD-A950 104/0 1434 PC **A11**/MF **A01**

AD-A950 105/7

Preliminary Outline of Organizational Maintenance Duties and Tasks for US/FRG MBT-70. Section II. Turret Maintenance.
AD-A950 105/7 1434 PC **A11**/MF **A01**

AD-A950 106/5

Preliminary Outline of Gunner Duties and Tasks for US/FRG MBT-70.
AD-A950 106/5 1436 PC **A04**/MF **A01**

AD-A950 107/3

Preliminary Outline of Crew Duties and Tasks for Operation of the M60A1E1/E2.
AD-A950 107/3 1434 PC **A10**/MF **A01**

AD-A950 108/1

Preliminary Outline of Tank Commander Duties and Tasks for US/FRG MBT-70.
AD-A950 108/1 1434 PC **A04**/MF **A01**

AD-A950 109/9

US/FRG MBT-70 Crew Functional Procedures and Performance Standards.
AD-A950 109/9 1434 PC **A08**/MF **A01**

AD-B000 632/0

Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
AD-B000 632/0 1409 PC **A10**/MF **A01**

AD-B000 729/4

A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432 PC **A03**/MF **A01**

AD-B001 109/8

INTERAND Target Annotation System.
AD-B001 109/8 1435 PC **A05**/MF **A01**

AD-B002 919/9

Magnetic Bubble Research.
AD-B002 919/9 1437 PC **A04**/MF **A01**

AD-B004 191/3

Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
AD-B004 191/3 1290 PC **A10**/MF **A01**

AD-B004 403/2

Check Test of Launcher, Grenade, 40mm, M203, under Arctic Winter Conditions.
AD-B004 403/2 1436 PC **A03**/MF **A01**

AD-B004 405/7

Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
AD-B004 405/7 1432 PC **A03**/MF **A01**

AD-B004 957/7

Advanced Aluminum-Chlorine Battery for Expendable ECM Devices.
AD-B004 957/7 1366 PC **A07**/MF **A01**

AD-B006 844/5

Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
AD-B006 844/5 1350 PC **A08**/MF **A01**

AD-B007 377/5

Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435 PC **A03**/MF **A01**

AD-B007 465/8

Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289 PC **A09**/MF **A01**

AD-B007 515/0

High Rate, Rechargeable, Silver-Zinc Pile Type Battery.
AD-B007 515/0 1366 PC **A06**/MF **A01**

AD-B007 705/7

Development of a Thin-Wall 20mm Explosive Projectile.
AD-B007 705/7 1432 PC **A05**/MF **A01**

AD-B007 733/9

Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B007 733/9 1438 PC **A05**/MF **A01**

AD-B007 816/2

Development of a Temperature Controller for a Vuilleumier (VM) Cycle Power Cylinder.
AD-B007 816/2 1378 PC **A09**/MF **A01**

AD-B007 943/4

Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
AD-B007 943/4 1356 PC **A06**/MF **A01**

AD-B008 124/0

Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289 PC **A09**/MF **A01**

AD-B008 209/9

Magnus and Roll-Damping Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B008 209/9 1434 PC **A07**/MF **A01**

AD-B009 489/6

Optical Couplers.
AD-B009 489/6 1440 PC **A09**/MF **A01**

AD-B010 100/6

GFU-6/E 30mm Ammunition Loader for GAU-8A Gun System.
AD-B010 100/6 1432 PC **A04**/MF **A01**

AD-B010 481/0

Analysis of the Power Spectral Density of Tape Recorder Flutter.
AD-B010 481/0 1399 PC **A05**/MF **A01**

AD-B010 501/5

RF-4C Digital Signal Transfer Unit Multisensor Display System (DSTUMDS).
AD-B010 501/5 1435 PC **A04**/MF **A01**

AD-B012 103/8

Millimeter Wave Radar Applications to Weapons Systems.
AD-B012 103/8 1413 PC **A06**/MF **A01**

AD-B012 737/3

Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352 PC **A05**/MF **A01**

AD-B013 302/5

A Methodology for Predicting Ammunition Requirements as a Function of Force Size.
AD-B013 302/5 1432 PC **A06**/MF **A01**

AD-B013 340/5

Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438 PC **A04**/MF **A01**

AD-B013 355/3

Yaw Card Range Tests of a 30mm Frangible TP Projectile.
AD-B013 355/3 1432 PC **A02**/MF **A01**

AD-B014 108/5

Yaw Card Range Tests of a 30mm Target Projectile.
AD-B014 108/5 1432 PC **A02**/MF **A01**

AD-B014 349/5

Variable Capacitance Electrostatic Energy Conversion System.

AD-B014 349/5 1363 PC **A04**/MF **A01**

AD-B014 875/9
Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
AD-B014 875/9 1455 PC **A10**/MF **A01**

AD-B015 026/8
Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439 PC **A04**/MF **A01**

AD-B015 193/6
A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
AD-B015 193/6 1433 PC **A05**/MF **A01**

AD-B015 229/8
A Characterization Study of Several Heat Resistant Explosives in Mild Detonating Cords.
AD-B015 229/8 1433 PC **A04**/MF **A01**

AD-B015 343/7
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435 PC **A08**/MF **A01**

AD-B015 344/5
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435 PC **A12**/MF **A01**

AD-B015 629/9
Dynamic Color Scanner System.
AD-B015 629/9 1352 PC **A03**/MF **A01**

AD-B015 892/3
Vidicon Modification Study.
AD-B015 892/3 1352 PC **A03**/MF **A01**

AD-B017 944/0
A Finite Element Mach Box Procedure for Flutter Predictions of Panels in Three-Dimensional Supersonic Unsteady Potential Flow.
AD-B017 944/0 1438 PC **A06**/MF **A01**

AD-B018 629/6
Qualification Test of the Thiokol TE-M-364-19 Solid-Propellant Rocket Motor (S/N 19006).
AD-B018 629/6 1456 PC **A04**/MF **A01**

AD-B018 764/1
Infrared Thermometry and the Telatemp 44 as a Ship System Maintenance Monitoring Tool.
AD-B018 764/1 1393 PC **A04**/MF **A01**

AD-B021 970/9
Generating Weather Data for Linear Weapons Allocation Models.
AD-B021 970/9 1377 PC **A02**/MF **A01**

AD-B022 435/2
Congrats Temperature and Salinity to Sound Speed Conversion.
AD-B022 435/2 1436 PC **A03**/MF **A01**

AD-B022 460/0
YJ101-YF-17 Aircraft Prototype Development Summary.
AD-B022 460/0 1455 PC **A04**/MF **A01**

AD-B023 039/1
Independent Evaluation Report for Platoon Early Warning System (PEWS-IER) AN/TRS-2( ).
AD-B023 039/1 1400 PC **A03**/MF **A01**

AD-B024 828/6
XM714 Delay Fuze Tests.
AD-B024 828/6 1433 PC**$6.00***

AD-B024 969/8
Navy Tactical Applications Guide. Volume I. Techniques and Applications of Image Analysis.
AD-B024 969/8 1400 PC **A10**/MF **A01**

AD-B025 005/0
U.S. Maritime Interests in the South Atlantic. Appendix I.
AD-B025 005/0 1302 PC **A10**/MF **A01**

AD-B025 006/8
U. S. Maritime Interests in the South Atlantic. Appendix II.
AD-B025 006/8 1302 PC **A05**/MF **A01**

AD-B026 310/3
Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436 PC **A04**/MF **A01**

AD-B026 467/1
Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403 PC **A04**/MF **A01**

AD-B026 541/3
Development of a Lightweight 25mm Explosive Projectile.
AD-B026 541/3 1433 PC**$7.00***

AD-B027 191/6
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456 PC**$8.00***

AD-B027 446/4
30MM GAU-8/A Plastic Frangible Projectile.
AD-B027 446/4 1433 PC**$7.00***

AD-B027 872/1
Program Planning and Appraisal Methodology.
AD-B027 872/1 1297 PC**$11.00***

AD-B028 668/2
Application of Statistical Fracture Criteria to the Problem of Predicting Infrared Dome Thermal Shock Failures.
AD-B028 668/2 1411 PC **A04**/MF **A01**

AD-B029 195/5
Design Study for a 100-Watt Turboalternator Power Unit.
AD-B029 195/5 1364 PC **A03**/MF **A01**

AD-B029 209/4
Exploratory Development of Coated Fabric for Fire Proximity Suits.
AD-B029 209/4 1369 PC **A03**/MF **A01**

AD-B029 722/6
US Military Hand Guns. Examination of Literature for the Last Twenty Years.
AD-B029 722/6 1436 PC **A04**/MF **A01**

AD-B029 883/6
Department of Defense Materiel Distribution System Study. Volume I. Executive Summary.
AD-B029 883/6 1401 PC **A04**/MF **A01**

AD-B029 884/4
Department of Defense Materiel Distribution System Study. Volume II. Technical report.
AD-B029 884/4 1401 PC **A15**/MF **A01**

AD-B029 885/1
Department of Defense Materiel Distribution System Study. Volume III. Book 1, Optimization Model Run Index.
AD-B029 885/1 1401 PC **A12**/MF **A01**

AD-B029 886/9
Department of Defense Materiel Distribution System Study. Volume III, Book 2. Appendices A, B and C.
AD-B029 886/9 1401 PC **A13**/MF **A01**

AD-B029 887/7
Department of Defense Materiel Distribution System Study. Volume III. Book 3. Appendix D-1. Data Base Development.
AD-B029 887/7 1402 PC **A21**/MF **A01**

AD-B029 888/5
Department of Defense Materiel Distribution System Study. Volume III, Book 4. Appendix D-2, Data Aggregation.
AD-B029 888/5 1402 PC **A10**/MF **A01**

AD-B029 889/3
Department of Defense Materiel Distribution System Study. Volume 3, Book 5. Appendix D-3. Depot Cost and Capacity.
AD-B029 889/3 1402 PC **A17**/MF **A01**

AD-B029 890/1
Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 6. Appendix D-4, Transportation.
AD-B029 890/1 1402 PC **A19**/MF **A01**

AD-B029 891/9
Department of Defense Materiel Distribution System Study (DODMDS). Volume III, Book 7. Appendix D-5, Models.
AD-B029 891/9 1402 PC **A04**/MF **A01**

AD-B029 892/7
Department of Defense Materiel Distribution System Study (DODMDS). Volume III. Book 8, Appendices E, F, and G.
AD-B029 892/7 1402 PC **A07**/MF **A01**

AD-B030 997/1
Signal Processor for IR Sensors.
AD-B030 997/1 1411 PC **A05**/MF **A01**

AD-B031 430/2
Generalized Monitoring Facility. Revision I. Installation Guide (W6.4.1).
AD-B031 430/2 1356 PC **A02**/MF **A01**

AD-B031 659/6
Survey of Decontamination Methods related to Field Decontamination of Vehicles and Materiel (Abridged).
AD-B031 659/6 1399 PC **A03**/MF **A01**

AD-B032 093/7
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433 PC **A06**/MF **A01**

AD-B032 525/8
Laser Safety Computer Program.
AD-B032 525/8 1439 PC **A03**/MF **A01**

AD-B033 624/8
Program PHFMOPT, Planing Hull Feasibility Model, User's Manual.
AD-B033 624/8 1393 PC **A08**/MF **A01**

AD-B033 848/3
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400 PC **A03**/MF **A01**

AD-B034 309/5
Military Operations in Built-Up Areas (MOBA).
AD-B034 309/5 1403 PC **A08**/MF **A01**

AD-B036 761/5
Near Infrared Gas Lasers.
AD-B036 761/5 1439 PC **A08**/MF **A01**

AD-B038 157/4
Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433 PC **A07**/MF **A01**

AD-B039 121/9
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359 PC **A06**/MF **A01**

AD-B039 142/5
The Effects of Earplugs and Earmuffs on Pitch Discrimination in Noise.
AD-B039 142/5 1326 PC **A02**/MF **A01**

AD-B040 233/9
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435 PC **A03**/MF **A01**

AD-B040 437/6
Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
AD-B040 437/6 1331 PC **A03**/MF **A01**

AD-B041 709/7
Target Recognition System Design: Computational Structures with Response Time Characteristics Dictated by the Operational Environment.
AD-B041 709/7 1413 PC **A03**/MF **A01**

AD-B042 976/1
Physiological and Pharmacological Effects Following Oral Administration of Monopropellants, August 1978-September 1979.
AD-B042 976/1 1328 PC **A02**/MF **A01**

AD-B043 559/4
Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324 PC **A07**/MF **A01**

AD-B044 225/1
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
AD-B044 225/1 1289 PC **A05**/MF **A01**

AD-B951 703/8
Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples.
AD-B951 703/8 1421 PC **A03**/MF **A01**

AD-B951 735/0
Operation GREENHOUSE. Scientific Director's Report. Annex 3.0. The Test of Structures.
AD-B951 735/0 1421 PC **A06**/MF **A01**

AD-B951 736/8
Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1.
AD-B951 736/8 1426 PC **A09**/MF **A01**

AD-B951 738/4
Operation WIGWAM. Project 4.1. Weapons Placement at Operation WIGWAM.
AD-B951 738/4 1402 PC **A02**/MF **A01**

AD-B951 739/2
Operation WIGWAM. Project 4.2. Weapons Assembly.
AD-B951 739/2 1402 PC **A02**/MF **A01**

AD-B951 740/0
Operation PLUMBBOB. Project 2.9. Nuclear Radiation Received by Aircrews Firing the MB-1 Rocket.
AD-B951 740/0 1327 PC **A02**/MF **A01**

AD-B951 741/8
Operation PLUMBBOB. Project 39.1b. Neutron Dosimetry by the Threshold-Detector Technique.
AD-B951 741/8 1327 PC **A02**/MF **A01**

AD-B951 742/6
Operation PLUMBBOB. Project 41.3. Effects of Altitude on Neutron Measurements.
AD-B951 742/6 1421 PC **A02**/MF **A01**

AD-C019 184/1
A New Angular Displacement Transducer.
AD-C019 184/1 1396 PC **A02**/MF **A01**

AD-D007 853/5
Flow-Closing Bleed Valve Assembly.
PAT-APPL-6-171 611 1455 PC **A02**/MF **A01**

AD-D007 854/3
Taggants with Explosive Induced Magnetic Susceptibility.
PAT-APPL-6-181 924 1433 PC **A02**/MF **A01**

AD-D007 855/0
Multi-Tone Jammer.
PAT-APPL-6-181 940 1410 PC **A02**/MF **A01**

AD-D007 856/8
Perfluorocompounds.
PAT-APPL-6-182 562 1374 PC **A02**/MF **A01**

AD-D007 857/6
Perfluorocarbon Ethers.
PAT-APPL-6-182 564 1374 PC **A02**/MF **A01**

AD-D007 858/4
Perfluorinated Epoxides.
PAT-APPL-6-182 563 1374 PC **A02**/MF **A01**

AD-D007 859/2
A Netted Search Radar System.
PAT-APPL-6-185 469 1413 PC **A02**/MF **A01**

AD-D007 860/0
P+ N Gallium Phosphide Photodiodes.

PAT-APPL-6-185 471 1352 PC **A02**/MF **A01**

AD-D007 861/8
Automatic Bandwidth Control System.
PAT-APPL-6-185 472 1412 PC **A02**/MF **A01**

AD-D007 862/6
Improved Film Cooled Annular Combustor.
PAT-APPL-6-185 473 1455 PC **A02**/MF **A01**

AD-D007 863/4
Fuel Valve.
PAT-APPL-6-187 646 1455 PC **A02**/MF **A01**

AD-D007 864/2
Power Circuit Utilizing Self Excited Hall Effect Switch Means.
PAT-APPL-6-189 237 1361 PC **A02**/MF **A01**

AD-D007 865/9
Non-Fouling Print Stylus.
PATENT-4 206 466 1399 Not available NTIS

AD-D007 866/7
Connector-to-Connector Adaptor.
PATENT-4 218 110 1352 Not available NTIS

AD-D007 867/5
Surface Acoustic Signal Defader.
PATENT-4 219 888 1437 Not available NTIS

AD-D007 868/3
Long Range Listening System.
PATENT-4 223 311 1410 Not available NTIS

AD-D007 869/1
Chemical Agent Detection Method and Apparatus.
PATENT-4 225 316 1399 Not available NTIS

AD-D007 870/9
Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353 Not available NTIS

AD-D007 871/7
Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455 Not available NTIS

AD-D007 872/5
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361 Not available NTIS

AD-D007 873/3
Acoustical Deverberator.
PATENT-4 225 954 1407 Not available NTIS

AD-D007 874/1
Reverse Velocity Rotor System for Rotorcraft.
PATENT-4 227 656 1289 Not available NTIS

AD-D007 875/8
Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361 Not available NTIS

AD-D007 876/6
Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332 Not available NTIS

AD-D007 877/4
Radar Sensitivity Time Control Using Range Gated Feedback.
PATENT-4 228 435 1413 Not available NTIS

AD-D007 878/2
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332 Not available NTIS

AD-D007 879/0
Offset Correction Apparatus for a Successive Approximation A/D Converter.
PATENT-4 228 423 1361 Not available NTIS

AD-D007 880/8
Clutch Protection Circuit.
PATENT-4 227 232 1361 Not available NTIS

AD-D007 881/6
High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361 Not available NTIS

AD-D007 882/4
Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369 Not available NTIS

AD-E200-579
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380 PC **A06**/MF **A01**

AD-E200-580
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380 PC **A05**/MF **A01**

AD-E200-581
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380 PC **A06**/MF **A01**

AD-E200-606
Radiation Evaluation of the AM2901A Microprocessor.
AD-A092 415/9 1356 PC **A04**/MF **A01**

AD-E200-607
QUANTA - Users Manual.
AD-A092 379/7 1403 MF **A01**

AD-E400-444
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432 PC **A05**/MF **A01**

AD-E400-484
Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
AD-A091 988/6 1431 MF **A01**

AD-E400-487
Analytical Chemistry of 2,4,6-Trinitrotoluene.
AD-A092 348/2 1432 PC **A03**/MF **A01**

AD-E400-490
Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.
AD-A092 344/1 1435 PC **A03**/MF **A01**

AD-E400-510
Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437 PC **A04**/MF **A01**

AD-E410-332
Development of a Two-Piece Mask and Lens and Mold for Same.
AD-A092 380/5 1326 PC **A04**/MF **A01**

AD-E410-335
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293 PC **A03**/MF **A01**

AD-E430-523
A Congeries of Numerical Models used at the BRL.
AD-A091 886/2 1434 PC **A08**/MF **A01**

AD-E430-527
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334 PC **A03**/MF **A01**

AD-E430-530
WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356 PC **A03**/MF **A01**

AD-E430-531
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
AD-A092 375/5 1432 PC **A02**/MF **A01**

AD-E430-534
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436 PC **A02**/MF **A01**

AD-E430-538
Strong Blast Wave Computer Programs.
AD-A092 346/6 1435 PC **A04**/MF **A01**

AD-E430-539
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395 PC **A04**/MF **A01**

AD-E430-540
Tank Wars General Information Manual.
AD-A092 350/8 1434 PC **A02**/MF **A01**

AD-E430-543
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377 PC **A03**/MF **A01**

AD-E440-095
Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
AD-A091 997/7 1450 PC **A02**/MF **A01**

AD-E500-219
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401 PC **A10**/MF **A01**

AD-E750-037
Soldiers Amidst the Rubble: The United States Army and the San Francisco Earthquake of 1906.
AD-A092 457/1 1349 PC **A09**/MF **A01**

AD-E900-000
Effect of Response Mode on Target Identification.
AD-A092 381/3 1412 PC **A03**/MF **A01**

AD-E900-018
Coso Monitoring Program.
AD-A092 417/5 1343 PC **A04**/MF **A01**

AD-E900-032
Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396 PC **A08**/MF **A01**

AD-E950-034
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296 PC **A10**/MF **A01**

AD-E950-035
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412 PC **A05**/MF **A01**

AD-E950-036
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439 PC **A03**/MF **A01**

AD-482 913/1
Lightweight radar alarm system. Vol. 2.
AD-482 913/1 1413 PC **A10**/MF **A01**

AD-482 920/6
Lightweight radar alarm system. Vol. 1.
AD-482 920/6 1413 PC **A07**/MF **A01**

AD-500 169/8
Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437 PC **A05**/MF **A01**

AD-503 039/0
Perimeter Protection System.
AD-503 039/0 1413 PC **A04**/MF **A01**

AD-833 815/4
Engineering Evaluation of the Vanguard M-731 Viewer.
AD-833 815/4 1399 PC **A03**/MF **A01**

AD-845 654/3
Lessons Learned, Headquarters, Fort Buckner.
AD-845 654/3 1403 PC **A02**/MF **A01**

AD-845 655/0
Lessons Learned, Headquarters, 63D Signal Battalion.
AD-845 655/0 1403 PC **A03**/MF **A01**

AD-855 117/8
Lessons Learned, 4-68. Communications and Electronics Lessons Learned.
AD-855 117/8 1403 PC **A04**/MF **A01**

AD-855 273/9
Lessons Learned, Headquarters, 93rd Engineer Battalion.
AD-855 273/9 1403 PC **A02**/MF **A01**

AD-855 322/4
Lessons Learned, Headquarters, 36th Engineer Battalion.
AD-855 322/4 1403 PC **A02**/MF **A01**

AD-855 356/2
Lessons Learned, Headquarters, 164th Aviation Group.
AD-855 356/2 1403 PC **A02**/MF **A01**

AD-855 547/6
Lessons Learned, Headquarters, 299th Engineer Battalion.
AD-855 547/6 1403 PC **A03**/MF **A01**

AD-855 561/7
Lessons Learned, Headquarters, 169th Engineer Battalion.
AD-855 561/7 1403 PC **A02**/MF **A01**

AD-855 651/6
Lessons Learned, Headquarters, 3D Battalion,506th Infantry.
AD-855 651/6 1403 PC **A02**/MF **A01**

AD-855 695/3
Lessons Learned, Headquarters, I Corps Tactical Zone Signal Group.
AD-855 695/3 1403 PC **A02**/MF **A01**

AD-855 900/7
Lessons Learned, Headquarters, 84th Engineer Battalion.
AD-855 900/7 1403 PC **A02**/MF **A01**

AD-855 901/5
Lessons Learned, Headquarters, 588th Engineer Battalion.
AD-855 901/5 1403 PC **A02**/MF **A01**

AD-856 079/9
Lessons Learned, Headquarters, 31st Engineer Battalion.
AD-856 079/9 1403 PC **A02**/MF **A01**

AD-856 118/5
Lessons Learned, Headquarters, 20th Engineer Battalion.
AD-856 118/5 1404 PC **A03**/MF **A01**

AD-856 164/9
Lessons Learned, Headquarters, 577th Engineer Battalion.
AD-856 164/9 1404 PC **A02**/MF **A01**

AD-856 367/8
Lessons Learned, Headquarters, 116th Engineer Battalion.
AD-856 367/8 1404 PC **A02**/MF **A01**

AD-856 713/3
Lessons Learned, Headquarters, 46th Engineer Battalion.
AD-856 713/3 1404 PC **A03**/MF **A01**

AD-856 745/5
Lessons Learned Review of the HQ USEUCOM Command Center Project.
AD-856 745/5 1404 PC **A02**/MF **A01**

AD-856 914/7
Lessons Learned, Headquarters, 34th General Support Group.
AD-856 914/7 1404 PC **A02**/MF **A01**

AD-857 032/7
Lessons Learned, Headquarters, 92nd Engineer Battalion.
AD-857 032/7 1404 PC **A02**/MF **A01**

AD-857 128/3
Lessons Learned, Headquarters, 165th Aviation Group.
AD-857 128/3 1404 PC **A02**/MF **A01**

AD-857 482/4
Lessons Learned, Headquarters, 160th Signal Group.
AD-857 482/4 1404 PC **A02**/MF **A01**

AD-857 603/5
Lessons Learned, Headquarters, 815th Engineer Battalion (Construction).

AD-857 603/5 1404 PC$7.00*

AD-858 376/7

Lessons Learned, Headquarters, 64th Quartermaster Battalion.
AD-858 376/7 1404 PC **A02**/MF **A01**

AD-858 543/2

Lessons Learned, Headquarters, 394th Transportation Battalion.
AD-858 543/2 1404 PC **A02**/MF **A01**

AD-858 938/4

Lessons Learned, Headquarters, 972d Signal Battalion.
AD-858 938/4 1404 PC **A02**/MF **A01**

AD-858 944/2

Lessons Learned, Headquarters, U. S. Army Depot Long Binh.
AD-858 944/2 1404 PC **A02**/MF **A01**

AD-858 945/9

Lessons Learned, Headquarters, United States Army, Pacific.
AD-858 945/9 1404 PC **A02**/MF **A01**

AD-859 175/2

Lessons Learned, Headquarters, 184th Ordnance Battalion (Ammo).
AD-859 175/2 1404 PC **A03**/MF **A01**

AD-859 256/0

Lessons Learned, Headquarters, 125th Transportation Command.
AD-859 256/0 1404 PC **A02**/MF **A01**

AD-859 267/7

Lessons Learned, Headquarters, 70th Engineer Battalion.
AD-859 267/7 1404 PC **A02**/MF **A01**

AD-859 278/4

Lessons Learned, Headquarters, 2d Logistical Command.
AD-859 278/4 1404 PC **A02**/MF **A01**

AD-859 308/9

Lessons Learned, Headquarters 4th Transportation Command.
AD-859 308/9 1404 PC **A03**/MF **A01**

AD-859 333/7

Lessons Learned, Headquarters, 809th Engineer Battalion (Construction).
AD-859 333/7 1404 PC **A02**/MF **A01**

AD-859 337/8

Lessons Learned, Headquarters, Army Depot, Cam Ranh.
AD-859 337/8 1404 PC **A03**/MF **A01**

AD-859 379/0

Lessons Learned, Headquarters, 79th Engineer Group, (Construction).
AD-859 379/0 1404 PC **A02**/MF **A01**

AD-859 381/6

Lessons Learned, Headquarters, 24th Transportation Battalion (Terminal).
AD-859 381/6 1404 PC **A02**/MF **A01**

AD-859 526/6

Lessons Learned, Headquarters, 14th Transportation Battalion.
AD-859 526/6 1404 PC **A02**/MF **A01**

AD-859 530/8

Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
AD-859 530/8 1404 PC **A03**/MF **A01**

AD-859 531/6

Lessons Learned, Headquarters, U. S. Army Depot, Qui Nhon.
AD-859 531/6 1404 PC **A03**/MF **A01**

AD-859 596/9

Lessons Learned, Headquarters, 124th Transportation Command (Terminal A).
AD-859 596/9 1405 PC **A02**/MF **A01**

AD-859 837/7

Lessons Learned, Headquarters, 35th Engineer Group (Construction).
AD-859 837/7 1405 PC **A02**/MF **A01**

AD-859 902/9

Lessons Learned, Headquarters 44th Engineer Group (Construction).
AD-859 902/9 1405 PC **A02**/MF **A01**

AD-859 903/7

Lessons Learned, Headquarters 507th Transportation Group (Movement Control).
AD-859 903/7 1405 PC$7.00*

AD-859 909/4

Lessons Learned, Headquarters, 538th Engineer Battalion.
AD-859 909/4 1405 PC **A02**/MF **A01**

AD-859 926/8

Lessons Learned, Headquarters, 864th Engineer Battalion (Construction).
AD-859 926/8 1405 PC **A02**/MF **A01**

AD-859 944/1

Lessons Learned, Headquarters, U. S. Army Headquarters Area Command.
AD-859 944/1 1405 PC **A02**/MF **A01**

AD-860 083/5

Lessons Learned, Headquarters, Da Nang Signal Battalion.
AD-860 083/5 1405 PC **A02**/MF **A01**

AD-860 216/1

Lessons Learned, Headquarters, 9th Logistical Command.
AD-860 216/1 1405 PC **A02**/MF **A01**

AD-860 217/9

Lessons Learned, Headquarters, 44th Medical Brigade.
AD-860 217/9 1405 PC **A02**/MF **A01**

AD-860 218/7

Lessons Learned, Headquarters, 63rd Signal Battalion (Army).
AD-860 218/7 1405 PC **A02**/MF **A01**

AD-860 344/1

Lessons Learned, Headquarters, 20th Engineer Battalion.
AD-860 344/1 1405 PC **A02**/MF **A01**

AD-860 345/8

Lessons Learned, Headquarters, 31st Engineer Battalion.
AD-860 345/8 1405 PC **A02**/MF **A01**

AD-860 346/6

Lessons Learned, Headquarters, 34th Engineer Battalion.
AD-860 346/6 1405 PC **A02**/MF **A01**

AD-860 347/4

Lessons Learned, Headquarters, 35th Engineer Battalion.
AD-860 347/4 1405 PC **A02**/MF **A01**

AD-860 348/2

Lessons Learned, Headquarters, USASTRATCOM Facility Nha Trang.
AD-860 348/2 1303 PC **A02**/MF **A01**

AD-860 461/3

Lessons Learned, Headquarters, 68th Medical Group.
AD-860 461/3 1405 PC **A02**/MF **A01**

AD-860 632/9

Lessons Learned, Headquarters, 84th Engineer Battalion.
AD-860 632/9 1405 PC **A02**/MF **A01**

AD-860 678/2

Lessons Learned, Headquarters, 41st Signal Battalion.
AD-860 678/2 1405 PC **A02**/MF **A01**

AD-860 742/6

Lessons Learned, Headquarters, Phu Lam Signal Battalion.
AD-860 742/6 1405 PC **A02**/MF **A01**

AD-861 029/7

Lessons Learned, Headquarters, 165th Aviation Group.
AD-861 029/7 1405 PC **A03**/MF **A01**

AD-861 030/5

Lessons Learned, Headquarters, 62d Engineer Battalion.
AD-861 030/5 1405 PC **A02**/MF **A01**

AD-861 031/3

Lessons Learned, Headquarters, 34th Engineer Group.
AD-861 031/3 1405 PC **A02**/MF **A01**

AD-861 032/1

Lessons Learned, Headquarters, 43d Signal Battalion.
AD-861 032/1 1405 PC **A02**/MF **A01**

AD-861 033/9

Lessons Learned, Headquarters, 36th Signal Battalion.
AD-861 033/9 1405 PC **A02**/MF **A01**

AD-861 474/5

Lessons Learned, Headquarters, 52d Signal Battalion.
AD-861 474/5 1405 PC **A02**/MF **A01**

AD-861 493/5

Lessons Learned, Headquarters, 3d Surgical Hospital.
AD-861 493/5 1405 PC **A02**/MF **A01**

AD-861 494/3

Lessons Learned, Headquarters, 3d Field Hospital.
AD-861 494/3 1406 PC **A02**/MF **A01**

AD-861 495/0

Lessons Learned, Headquarters, US Army Regional Communications Group (Vietnam).
AD-861 495/0 1406 PC **A02**/MF **A01**

AD-861 496/8

Lessons Learned, Headquarters, 1st Signal Brigade (USASTRATCOM).
AD-861 496/8 1406 PC **A03**/MF **A01**

AD-861 505/6

Lessons Learned, Headquarters, 45th Surgical Hospital.
AD-861 505/6 1406 PC **A02**/MF **A01**

AD-861 512/2

Lessons Learned, Headquarters, 29th Evacuation Hospital.
AD-861 512/2 1406 PC **A02**/MF **A01**

AD-861 521/3

Lessons Learned, Headquarters, 29th Signal Group.
AD-861 521/3 1406 PC **A02**/MF **A01**

AD-861 529/6

Lessons Learned. Headquarters, 19th Engineer Battalion (Combat).
AD-861 529/6 1406 PC **A02**/MF **A01**

AD-861 530/4

Lessons Learned. Headquarters, 27th Engineer Battalion (Combat).
AD-861 530/4 1406 PC **A02**/MF **A01**

AD-861 531/2

Lessons Learned. Headquarters, 12th Signal Group.
AD-861 531/2 1406 PC **A02**/MF **A01**

AD-861 532/0

Lessons Learned. Headquarters, 2nd Civil Affairs Company.
AD-861 532/0 1406 PC **A02**/MF **A01**

AD-861 538/7

Lessons Learned. Headquarters, US Army STRATCOM Long Lines Battalion North.
AD-861 538/7 1406 PC **A03**/MF **A01**

AD-861 633/6

Lessons Learned, Headquarters, 40th Signal Battalion (Construction).
AD-861 633/6 1406 PC **A02**/MF **A01**

AD-861 634/4

Lessons Learned, Headquarters, 70th Engineer Battalion.
AD-861 634/4 1406 PC **A03**/MF **A01**

AD-861 636/9

Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
AD-861 636/9 1406 PC **A03**/MF **A01**

AD-861 670/8

Lessons Learned, Headquarters, 169th Engineer Battalion.
AD-861 670/8 1406 PC **A03**/MF **A01**

AD-861 777/1

Lessons Learned, Headquarters, 86th Engineer Battalion.
AD-861 777/1 1406 PC **A02**/MF **A01**

AD-861 827/4

Lessons Learned, Headquarters, 538th Engineer Battalion.
AD-861 827/4 1406 PC **A02**/MF **A01**

AD-861 828/2

Lessons Learned, Headquarters, 519th Transportation Battalion.
AD-861 828/2 1406 PC **A02**/MF **A01**

AD-861 834/0

Lessons Learned, Headquarters, 29th Civil Affairs Company.
AD-861 834/0 1406 PC **A02**/MF **A01**

AD-861 915/7

Lessons Learned, Headquarters, 41st Civil Affairs Company.
AD-861 915/7 1406 PC **A02**/MF **A01**

AD-871 914/8

Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/8 1379 PC **A09**/MF **A01**

AD-879 736/7

Design Manual for Vertical Gusts Based on Power Spectral Techniques.
AD-879 736/7 1289 PC **A08**/MF **A01**

AD-883 122/4

System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399 PC **A07**/MF **A01**

AD-884 320/3

Engineering Evaluation of the AR-109(XW-1) Viewer-Printer, Projection, Photographic.
AD-884 320/3 1399 PC **A06**/MF **A01**

AD-884 645/3

Coherent Rear Projection Viewer Evaluation.
AD-884 645/3 1399 PC **A03**/MF **A01**

AD-885 234/5

Modifications to Devenco Model PPS-3A Radar Fence.
AD-885 234/5 1413 PC **A02**/MF **A01**

AD-885 260/0

Blast Fields About Rockets and Recoilless Rifles.
AD-885 260/0 1436 PC **A07**/MF **A01**

AD-885 551/2

Data Link, Helicopter Supported Radar.
AD-885 551/2 1413 PC **A10**/MF **A01**

AD-885 837/5

Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
AD-885 837/5 1399 PC **A04**/MF **A01**

AD-886 531/3

High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
AD-886 531/3 1289 PC **A05**/MF **A01**

AD-886 969/5

Preliminary Development of an HY-180 Weldment System.
AD-886 969/5 1370 PC **A06**/MF **A01**

AD-887 376/2

LSI Correlator.
AD-887 376/2 1359 PC **A02**/MF **A01**

AD-888 625/1

Redundant Area Coding Study.
AD-888 625/1 1358 PC **A08**/MF **A01**

AD-890 094/6

LSI Correlator.

AD-890 094/6 1359 PC A02/MF A01

AD-891 461/6
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part I. Thermodynamic Design and Study of Life-Limiting Components.
AD-891 461/6 1457 PC A07/MF A01

AD-892 041/5
Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.
AD-892 041/5 1359 PC A19/MF A01

AD-892 042/3
Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
AD-892 042/3 1359 PC A08/MF A01

AD-892 277/5
LSI Correlator.
AD-892 277/5 1360 PC A03/MF A01

AD-892 684/2
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 684/2 1433 PC A03/MF A01

AD-893 054/7
Photo-Carto Interface.
AD-893 054/7 1340 PC A10/MF A01

AD-893 139/6
Expanded Phase I ACS Experiments. Volume I. Experimental System Testing and Evaluation.
AD-893 139/6 1340 PC A05/MF A01

AD-893 140/4
Expanded Phase I ACS Experiments. Volume II. Design Requirements for a Prototype Cartographic Finishing Subsystem.
AD-893 140/4 1340 PC A03/MF A01

AD-894 188/2
Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
AD-894 188/2 1438 PC A18/MF A01

AD-894 759/0
Testing of 19.2 KB/S MODEM.
AD-894 759/0 1360 PC A03/MF A01

AD-900 343/5
Thin Film Hybrid Pulse Width Discriminator Circuit Fabrication.
AD-900 343/5 1360 PC A03/MF A01

AD-900 360/9
AS-11/B Stereoplotter Experiments and Studies.
AD-900 360/9 1341 PC A06/MF A01

AD-900 818/6
LSI Correlator.
AD-900 818/6 1360 PC A05/MF A01

AD-902 944/8
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
AD-902 944/8 1379 PC A04/MF A01

AD-903 700/3
'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411 PC A04/MF A01

AD-903 701/1
'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411 PC A04/MF A01

AD-904 089/0
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289 PC A14/MF A01

AD-904 407/4
The Delphi Technique and ITS Applicability to Army Systems Analyses.
AD-904 407/4 1378 PC A03/MF A01

AD-904 472/8
Handbook of Underwater Imaging System Design.
AD-904 472/8 1409 PC A14/MF A01

AD-904 665/7
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438 PC A12/MF A01

AD-906 757/0
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
AD-906 757/0 1409 PC A09/MF A01

AD-907 360/2
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379 PC A06/MF A01

AD-907 560/7
Analysis of Barium Clouds. Volume I.
AD-907 560/7 1294 PC A10/MF A01

AD-907 934/4
Expedient Surfacing and Drainage of Roads, Streets, and Parking and Storage Areas in Theater of Operations. Report 2. Tests Conducted Between August 1968 and July 1969,
AD-907 934/4 1382 PC A04/MF A01

AD-908 244/7
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
AD-908 244/7 1289 PC A07/MF A01

AD-910 973/7
Submarine Communication at ULF Frequencies. I. A Program of Investigation.
AD-910 973/7 1409 PC A05/MF A01

AD-912 392/8
Voice Countermeasures Effectiveness Analysis.
AD-912 392/8 1410 PC A05/MF A01

AD-912 789/5
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
AD-912 789/5 1360 PC A07/MF A01

AD-912 790/3
Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
AD-912 790/3 1360 PC A07/MF A01

AD-912 791/1
Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
AD-912 791/1 1360 PC A05/MF A01

AD-912 792/9
Ferrite/Dielectric High Power Phase Shifter Development. Part IV. Arc-Plasma Spray Fabrication and Material Studies.
AD-912 792/9 1360 PC A04/MF A01

AD-913 898/3
Titan Vehicle Electrostatic Environment.
AD-913 898/3 1457 PC A09/MF A01

AD-916 881/6
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360 PC A06/MF A01

AD-917 204/0
Aircraft Avionics Tradeoff Study.
AD-917 204/0 1358 PC A19/MF A01

AD-917 846/8
Some Applications of Hybrid Thick Film Technology.
AD-917 846/8 1360 PC A05/MF A01

AD-917 847/6
Modulator Driver Transistor.
AD-917 847/6 1352 PC A03/MF A01

AD-918 631/3
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409 PC A04/MF A01

AD-918 880/6
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439 PC A04/MF A01

AD-918 930/9
1.06 Micrometer High Sensitivity IR Photocathode.
AD-918 930/9 1411 PC A04/MF A01

AD-919 267/5
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409 PC A05/MF A01

AD-919 567/8
Thin Film Optical Waveguide Technology.
AD-919 567/8 1352 PC A04/MF A01

AD-919 575/1
Off-Line Orthographic Printer.
AD-919 575/1 1399 PC A06/MF A01

AD-919 850/8
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440 PC A08/MF A01

AD-921 863/7
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412 PC A05/MF A01

AD-922 009/6
Development of a High Resolution Kinescope Recorder.
AD-922 009/6 1352 PC A04/MF A01

AD-922 519/4
Advanced Modulator II.
AD-922 519/4 1409 PC A04/MF A01

AD-923 171/3
Silicon Target Return Beam Vidicon.
AD-923 171/3 1352 PC A05/MF A01

AD-923 272/9
Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
AD-923 272/9 1358 PC A14/MF A01

AD-923 431/1
The Improved JCVS.
AD-923 431/1 1356 PC A03/MF A01

AD-923 650/6
Low Loss Wideband Acoustic Delay Line.
AD-923 650/6 1352 PC A03/MF A01

ADCR-80-1
Demonstration of a Method for Determining Critical Store Configurations for Wing-Store Flutter.
AD-A092 257/5 1288 PC A07/MF A01

ADL-C-74100-1
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379 PC A06/MF A01

ADL-C-83918
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300 PC A08/MF A01

AECL-6206
Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
AECL-6206 1327 PC A04/MF A01

AECL-6401
Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335 PC A05/MF A01

AECL-6413
MAKSIMA-CHEMIST: A Program for Mass Action Kinetics Simulation by Automatic Chemical Equation Manipulation and Integration Using Stiff Techniques.
AECL-6413 1335 PC A03/MF A01

AECL-6487
Basic Graphical Data Management System (BAGDAMS Version 1.0). User's Guide and Reference Handbook.
AECL-6487 1356 PC A07/MF A01

AECL-6587
Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429 PC A02/MF A01

AEDC-TR-75-149
Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B007 733/9 1438 PC A05/MF A01

AEDC-TR-75-163
Magnus and Roll-Damping Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B008 209/9 1434 PC A07/MF A01

AEDC-TR-77-59
Qualification Test of the Thiokol TE-M-364-19 Solid-Propellant Rocket Motor (S/N 19006).
AD-B018 629/6 1456 PC A04/MF A01

AEDC-TSR-79-P62
Skin Friction Measurements at Transonic Mach Numbers.
AD-A092 366/4 1396 PC A03/MF A01

AEEW-M-1663
Absolute Calibration of the Rh-103(N,N')Rh-103M Reaction Rate.
AEEW-M-1663 1441 PC A02/MF A01

AERE-M-3047
Trace Element Analysis of Old Exposed Air Filters: A Feasibility Study.
AERE-M-3047 1335 PC A02/MF A01

AERE-R-7477
Harwell Subroutine Library. A Catalogue of Subroutines (1973).
AD-A092 033/0 1375 PC A07/MF A01

AERE-R-7477-SUPPL-2
Harwell Subroutine Library. A Catalogue of Subroutines (1973). Supplement Number 2.
AD-A092 034/8 1375 PC A02/MF A01

AEWES-MISC-PAPER-S-69-11-2
Expedient Surfacing and Drainage of Roads, Streets, and Parking and Storage Areas in Theater of Operations. Report 2. Tests Conducted Between August 1968 and July 1969,
AD-907 934/4 1382 PC A04/MF A01

AFAL-TR-73-170
Titan Vehicle Electrostatic Environment.
AD-913 898/3 1457 PC A09/MF A01

AFAL-TR-73-230
Voice Countermeasures Effectiveness Analysis.
AD-912 392/8 1410 PC A05/MF A01

AFAL-TR-73-250-PT-1
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
AD-912 789/5 1360 PC A07/MF A01

AFAL-TR-73-250-PT-2
Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
AD-912 790/3 1360 PC A07/MF A01

AFAL-TR-73-250-PT-3
Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
AD-912 791/1 1360 PC A05/MF A01

AFAL-TR-73-250-PT-4
Ferrite/Dielectric High Power Phase Shifter Development. Part IV. Arc-Plasma Spray Fabrication and Material Studies.

AD-912 792/9 1360 PC **A04**/MF **A01**

AFAL-TR-73-344
Study of Integrated Thermionic Circuits for Aerospace Application.
AD-916 881/6 1360 PC **A06**/MF **A01**

AFAL-TR-73-367
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412 PC **A05**/MF **A01**

AFAL-TR-73-413
Some Applications of Hybrid Thick Film Technology.
AD-917 846/8 1360 PC **A05**/MF **A01**

AFAL-TR-74-17
Advanced Modulator II.
AD-922 519/4 1409 PC **A04**/MF **A01**

AFAL-TR-74-27
Modulator Driver Transistor.
AD-917 847/6 1352 PC **A03**/MF **A01**

AFAL-TR-74-32
High Average Power Diode Laser Illuminator. Phase 1/Phase 2.
AD-918 880/6 1439 PC **A04**/MF **A01**

AFAL-TR-74-41
Development of a High Resolution Kinescope Recorder.
AD-922 009/6 1352 PC **A04**/MF **A01**

AFAL-TR-74-60
Thin Film Optical Waveguide Technology.
AD-919 567/8 1352 PC **A04**/MF **A01**

AFAL-TR-74-66
INTERAND Target Annotation System.
AD-B001 109/8 1435 PC **A05**/MF **A01**

AFAL-TR-74-68
1.06 Micrometer High Sensitivity IR Photocathode.
AD-918 930/9 1411 PC **A04**/MF **A01**

AFAL-TR-74-81-VOL-1
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409 PC **A04**/MF **A01**

AFAL-TR-74-110
Ruggedized CO2 Packaged Laser.
AD-919 850/8 1440 PC **A08**/MF **A01**

AFAL-TR-74-122
Low Loss Wideband Acoustic Delay Line.
AD-923 650/6 1352 PC **A03**/MF **A01**

AFAL-TR-74-130-VOL-1
Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
AD-B004 191/3 1290 PC **A10**/MF **A01**

AFAL-TR-74-132-VOL-1
Standard Multiplex Interface Definition for Advanced Aircraft Avionics. Volume I.
AD-923 272/9 1358 PC **A14**/MF **A01**

AFAL-TR-74-134
Silicon Target Return Beam Vidicon.
AD-923 171/3 1352 PC **A05**/MF **A01**

AFAL-TR-74-151
Dynamic Color Scanner System.
AD-B015 629/9 1352 PC **A03**/MF **A01**

AFAL-TR-74-196
Magnetic Bubble Research.
AD-B002 919/9 1437 PC **A04**/MF **A01**

AFAL-TR-74-314
Optical Couplers.
AD-B009 489/6 1440 PC **A09**/MF **A01**

AFAL-TR-75-92
Variable Capacitance Electrostatic Energy Conversion System.
AD-B014 349/5 1363 PC **A04**/MF **A01**

AFAL-TR-75-170
RF-4C Digital Signal Transfer Unit Multisensor Display System (DSTUMDS).
AD-B010 501/5 1435 PC **A04**/MF **A01**

AFAL-TR-76-57
Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439 PC **A04**/MF **A01**

AFAMRL-TR-79-5
Reprint: Suprathreshold Processing of Complex Visual Stimuli: Evidence for Linearity in Contrast Perception.
AD-A092 008/2 1326 PC **A02**/MF **A01**

AFAMRL-TR-79-109
Reprint: Effects of Ketamine HCl-Xylazine HCl Combinations on Cardiovascular and Pulmonary Values of the Rhesus Macaque (Macaca mulatta).
AD-A092 049/6 1325 PC **A02**/MF **A01**

AFAPL-TR-75-18
Advanced Aluminum-Chlorine Battery for Expendable ECM Devices.
AD-B004 957/7 1366 PC **A07**/MF **A01**

AFAPL-TR-75-51
High Rate, Rechargeable, Silver-Zinc Pile Type Battery.
AD-B007 515/0 1366 PC **A06**/MF **A01**

AFAPL-TR-77-18
YJ101-YF-17 Aircraft Prototype Development Summary.
AD-B022 460/0 1455 PC **A04**/MF **A01**

AFAPL-TR-78-107
Near Infrared Gas Lasers.
AD-B036 761/5 1439 PC **A08**/MF **A01**

AFAPL-TR-79-2036
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
AD-B044 225/1 1289 PC **A05**/MF **A01**

AFAPL-TR-79-2077
Determination of Flow Direction with Pressure Probes.
AD-A092 028/0 1454 PC **A05**/MF **A01**

AFATL-TR-75-76
Development of a Thin-Wall 20mm Explosive Projectile.
AD-B007 705/7 1432 PC **A05**/MF **A01**

AFATL-TR-75-86
Generating Weather Data for Linear Weapons Allocation Models.
AD-B021 970/9 1377 PC **A02**/MF **A01**

AFATL-TR-75-141
Static and Dynamic Stability Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B007 733/9 1438 PC **A05**/MF **A01**

AFATL-TR-75-158
GFU-6/E 30mm Ammunition Loader for GAU-8A Gun System.
AD-B010 100/6 1432 PC **A04**/MF **A01**

AFATL-TR-75-159
Magnus and Roll-Damping Characteristics of the Fixed-Fin and Inflatable Stabilizer Retarder Configurations of the MK-82 Store at Transonic Speeds.
AD-B008 209/9 1434 PC **A07**/MF **A01**

AFATL-TR-76-1
Yaw Card Range Tests of a 30mm Target Projectile.
AD-B014 108/5 1432 PC **A02**/MF **A01**

AFATL-TR-76-5
Yaw Card Range Tests of a 30mm Frangible TP Projectile.
AD-B013 355/3 1432 PC **A02**/MF **A01**

AFATL-TR-76-45-BK-1
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 343/7 1435 PC **A08**/MF **A01**

AFATL-TR-76-45-BK-2
HELP - A Multimaterial Eulerian Program in Two Space Dimensions and Time.
AD-B015 344/5 1435 PC **A12**/MF **A01**

AFATL-TR-76-47
Mutual Aerodynamic Interference Effects for Multiple Bodies of Revolution and Distorted Bodies of Revolution.
AD-B013 340/5 1438 PC **A04**/MF **A01**

AFATL-TR-76-92
Vidicon Modification Study.
AD-B015 892/3 1352 PC **A03**/MF **A01**

AFATL-TR-76-97
A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
AD-B015 193/6 1433 PC **A05**/MF **A01**

AFATL-TR-76-131
XM714 Delay Fuze Tests.
AD-B024 828/6 1433 PC**$6.00***

AFATL-TR-77-27
Program Planning and Appraisal Methodology.
AD-B027 872/1 1297 PC**$11.00***

AFATL-TR-77-36
30MM GAU-8/A Plastic Frangible Projectile.
AD-B027 446/4 1433 PC**$7.00***

AFATL-TR-77-50
A Rocket Engine Exhaust Plume Temperature Profile by Line Reversal Technique.
AD-B027 191/6 1456 PC**$8.00***

AFATL-TR-77-83
Development of a Lightweight 25mm Explosive Projectile.
AD-B026 541/3 1433 PC**$7.00***

AFESC/ESL-TR-79-33
Williams Air Force Base Air Quality Monitoring Study.
AD-A092 165/0 1361 PC **A05**/MF **A01**

AFESC/ESL-TR-80-32
Modal Analysis for Aircraft Response to Runway Surface Roughness.
AD-A092 057/9 1290 PC **A03**/MF **A01**

AFFDL-TR-69-122
Feasibility Study and Development Design of a Passive Radiative Cooler for Infrared Detectors.
AD-871 914/8 1379 PC **A09**/MF **A01**

AFFDL-TR-70-106
Design Manual for Vertical Gusts Based on Power Spectral Techniques.
AD-879 736/7 1289 PC **A08**/MF **A01**

AFFDL-TR-71-61
High Reynolds Number Transonic Performance of Improved Planar Airfoils with Jet Flaps.
AD-886 531/3 1289 PC **A05**/MF **A01**

AFFDL-TR-71-108-PT-2
Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
AD-894 188/2 1438 PC **A18**/MF **A01**

AFFDL-TR-71-147-PT-1
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part I. Thermodynamic Design and Study of Life-Limiting Components.
AD-891 461/6 1457 PC **A07**/MF **A01**

AFFDL-TR-71-147-PT-2
Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
AD-902 944/8 1379 PC **A04**/MF **A01**

AFFDL-TR-72-40-VOL-1
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
AD-908 244/7 1289 PC **A07**/MF **A01**

AFFDL-TR-72-40-VOL-2
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289 PC **A14**/MF **A01**

AFFDL-TR-72-40-VOL-3
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438 PC **A12**/MF **A01**

AFFDL-TR-72-88
Development of Rotary-Reciprocating Cryogenic Refrigerator for Space Applications.
AD-907 360/2 1379 PC **A06**/MF **A01**

AFFDL-TR-75-40
Advanced Metallic Air Vehicle Structure Program.
AD-B007 465/8 1289 PC **A09**/MF **A01**

AFFDL-TR-75-99
Development of a Temperature Controller for a Vuilleumier (VM) Cycle Power Cylinder.
AD-B007 816/2 1378 PC **A09**/MF **A01**

AFFDL-TR-75-100
Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289 PC **A09**/MF **A01**

AFFDL-TR-75-103
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
AD-B007 943/4 1356 PC **A06**/MF **A01**

AFFDL-TR-76-161
A Finite Element Mach Box Procedure for Flutter Predictions of Panels in Three-Dimensional Supersonic Unsteady Potential Flow.
AD-B017 944/0 1438 PC **A06**/MF **A01**

AFFTC-TIH-79-1
USAF Test Pilot School. Flight Test Handbook. Performance. Theory and Flight Techniques. Chapters 1 through 9.
AD-A091 990/2 1303 PC **A99**/MF **A01**

AFGL-AFSG-428
Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456 PC **A03**/MF **A01**

AFGL-ERP-706
Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456 PC **A03**/MF **A01**

AFGL-ERP-711
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293 PC **A03**/MF **A01**

AFGL-TR-80-0049
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333 PC **A02**/MF **A01**

AFGL-TR-80-0071
Ten-Bit Resolution PCM Encoder (Falling Sphere Experiment).
AD-A092 111/4 1359 PC **A03**/MF **A01**

AFGL-TR-80-0185
Atmospheric Effects on the Time-Varying Photoelectron Flux from Satellite Surfaces.
AD-A092 446/4 1456 PC **A03**/MF **A01**

AFGL-TR-80-0209
Horizontal Scale Variations in Satellite Estimates of Weather Erosion Parameters for Reentry Systems.
AD-A092 447/2 1456 PC **A03**/MF **A01**

AFGL-TR-80-0222
Structure and Composition Measurements in Equatorial Ionospheric Bubbles.
AD-A092 448/0 1293 PC **A03**/MF **A01**

AFGL-TR-80-0264
Design Study for Ground-Based Atmospheric Lidar System.
AD-A091 955/5 1292 PC **A11**/MF **A01**

AFGL-TR-80-0295
Reprint: Observed Relationships between High-Latitude Fields and Large Scale Birkeland Current Systems.

AD-A091 878/9 1292 PC **A02**/MF **A01**

AFGL-TR-80-0310
Reprint: Low Elevation Angle Wind Measurements by FM-CW Radar.
AD-A092 426/6 1295 PC **A02**/MF **A01**

AFGL-TR-80-0311
Reprint: Long-Term Measurements in C2n in the Boundary Layer.
AD-A092 427/4 1295 PC **A02**/MF **A01**

AFGL-TR-80-0312
Reprint: Design of a Wind Shear Detection Radar for Airports.
AD-A092 428/2 1295 PC **A02**/MF **A01**

AFGL-TR-80-0318
Reprint: Seasonal and Solar Cycle Variations of Equatorial Spread-F in the American Zone.
AD-A092 083/5 1293 PC **A02**/MF **A01**

AFGL-TR-80-0319
Reprint: Preliminary Results of Scintillation Measurements Associated with Ionosphere Heating and Possible Implications for the Solar Power Satellite.
AD-A092 084/3 1293 PC **A02**/MF **A01**

AFGL-TR-80-0320
Reprint: Airborne Studies of Equatorial F Layer Ionospheric Irregularities.
AD-A092 006/6 1293 PC **A02**/MF **A01**

AFGL-TR-80-0322
Reprint: Suggested Modification to the Total Volume Molecular Scattering Coefficient in LOWTRAN: Comment.
AD-A092 005/8 1440 PC **A02**/MF **A01**

AFGL-TR-80-0325
Reprint: On the Diffuse Cosmic Ultraviolet Background Measured From Aries A-8.
AD-A092 491/0 1292 PC **A02**/MF **A01**

AFGL-TR-80-0343
Reprint: Photochemistry of COS, CS2, CH3SCH3 and H2S: Implications for the Atmospheric Sulfur Cycle.
AD-A092 504/0 1294 PC **A02**/MF **A01**

AFIT-CI-79-199T
Management by Objective in the Air Force Tactical Air Command Telecommunication Environment.
AD-A092 054/6 1296 PC **A07**/MF **A01**

AFIT-CI-79-235D
Efficient Coding of the Prediction Residual.
AD-A092 198/1 1408 PC **A10**/MF **A01**

AFIT-CI-80-1D
A Composite Algorithm for Mixed Integer Constrained Nonlinear Optimization.
AD-A092 435/7 1378 PC **A11**/MF **A01**

AFIT-CI-80-3D
A Cylindrical Cloud Model for Microwave and Infrared Radiative Transfer-Applications to Defense Meteorological Satellite Program Microwave Sounders.
AD-A092 439/9 1293 PC **A08**/MF **A01**

AFIT-CI-80-4T
Analysis of a Simulated Source of Electromagnetic Pulses.
AD-A092 440/7 1452 PC **A04**/MF **A01**

AFIT-CI-80-9T
Diagnostic Software Development for a Real-Time Spectral Analysis System.
AD-A092 441/5 1356 PC **A08**/MF **A01**

AFIT-CI-80-10T
The Effects of the Direction of Control Loading on a One-Dimensional Tracking Task.
AD-A092 459/7 1288 PC **A04**/MF **A01**

AFIT-CI-80-11T
Digital Doppler Radial Velocity Data Compared Objectively with Digital Reflectivity Radar Data.
AD-A092 318/5 1413 PC **A06**/MF **A01**

AFIT-CI-80-14T
Fatigue in Graphite/Epoxy Bolted Joints.
AD-A092 362/3 1388 PC **A04**/MF **A01**

AFIT-CI-80-15T
Flameless Atomic Absorption Spectroscopy: Effects of Nitrates and Sulfates.
AD-A092 419/1 1334 PC **A07**/MF **A01**

AFIT-CI-80-16T
A New Computer Program for Plant Layout Design - OPDEP Optimal Plant Design and Evaluation Program.
AD-A092 363/1 1390 PC **A05**/MF **A01**

AFIT-CI-80-17T
Slant Visual Range from Drop-Size Distribution.
AD-A092 364/9 1290 PC **A05**/MF **A01**

AFIT-CI-80-20T
Environmental Influences in the Simulation of a Solar Space Heating System.
AD-A092 436/5 1378 PC **A07**/MF **A01**

AFIT-CI-80-21D
A New Horizontal Gradient, Continuous Flow, Ice Thermal Diffusion Chamber and Detailed Observation of Condensation-Freezing and Deposition Nucleations.
AD-A092 479/5 1294 PC **A07**/MF **A01**

AFIT-CI-80-22D
A Feasibility Study for Advanced Technology Integration for General Aviation.
AD-A092 437/3 1289 PC **A23**/MF **A01**

AFIT-CI-80-30D
Aircrew Compliance with Standard Operating Procedures as a Component of Airline Safety.
AD-A092 443/1 1287 PC **A09**/MF **A01**

AFIT-CI-80-31D
Dynamic Interactions between the Troposphere and Stratosphere.
AD-A092 420/9 1295 PC **A09**/MF **A01**

AFIT-CI-80-39T
Kinematic Features of the Large-Scale Mean State Phase II of Gate and Comparison with Phase III Features.
AD-A092 444/9 1295 PC **A05**/MF **A01**

AFIT-CI-80-40T
Determination of the Systematic Bias and Variability of the Error of the National Meteorological Center's Six-Layer Baroclinic Model.
AD-A092 372/2 1295 PC **A04**/MF **A01**

AFIT-CI-80-41T
Considerations for an Assembler Scheduled Multi-Microprocessor System.
AD-A092 216/1 1355 MF **A01**

AFIT-CI-80-42T
Comparative Histopathology of Acanthocephalan Infections in Some Freshwater Fishes.
AD-A092 258/3 1316 PC **A04**/MF **A01**

AFIT-CI-80-43T
The Influence of Cloud and Atmospheric Moisture on the Statistical Analysis of Nimbus VI Multispectral Radiation Measurements.
AD-A092 217/9 1294 PC **A07**/MF **A01**

AFML-TR-78-10
Exploratory Development of Coated Fabric for Fire Proximity Suits.
AD-B029 209/4 1369 PC **A03**/MF **A01**

AFOSR-TR-80-1043
Studies of Transient Discharges.
AD-A092 482/9 1437 PC **A02**/MF **A01**

AFOSR-TR-80-1046
Momentum Distribution of Ions in Plasma Beam.
AD-A092 385/4 1447 PC **A02**/MF **A01**

AFOSR-TR-80-1054
Design and Implementation of Multi-Input Adaptive Signal Extractions.
AD-A092 265/8 1355 PC **A04**/MF **A01**

AFOSR-TR-80-1055
Detection, Estimation, and Control on Group Manifolds.
AD-A092 386/2 1377 PC **A02**/MF **A01**

AFOSR-TR-80-1087
PASM: A Reconfigurable Multimicrocomputer System for Image Processing.
AD-A092 182/5 1355 PC **A02**/MF **A01**

AFOSR-TR-80-1114
Gas Surface Dynamics, High Power Laser-Solid Interactions.
AD-A092 183/3 1333 PC **A02**/MF **A01**

AFOSR-TR-80-1116
Approximation Techniques for Parameter Estimation in Hereditary Control Systems.
AD-A092 184/1 1376 PC **A02**/MF **A01**

AFOSR-TR-80-1117
On Schur Optimality.
AD-A092 185/8 1376 PC **A03**/MF **A01**

AFOSR-TR-80-1120
Stress-Corrosion Cracking of High-Strength Aluminum Alloys.
AD-A092 186/6 1369 PC **A02**/MF **A01**

AFOSR-TR-80-1121
The Study of Production Leadtime Forecasting Models.
AD-A091 970/4 1390 PC **A03**/MF **A01**

AFOSR-TR-80-1126
Reprint: Stochastic Control Under Partial Observations.
AD-A092 187/4 1376 PC **A02**/MF **A01**

AFOSR-TR-80-1131
Reprint: An Approach to Programmable CTD Filters Using Coefficients 0, + 1, and -1.
AD-A091 877/1 1358 PC **A02**/MF **A01**

AFOSR-TR-80-1136
Nonlinear Semigroup for Controlled Partially Observed Diffusions.
AD-A092 188/2 1376 PC **A03**/MF **A01**

AFOSR-TR-80-1137
Attractivity Properties of alpha-Contractions.
AD-A091 975/3 1375 PC **A02**/MF **A01**

AFOSR-TR-80-1140
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447 PC **A02**/MF **A01**

AFOSR-TR-80-1143
One- and Two-Photon Optically Pumped Laser Devices: New Chemical Laser Diagnostics and Kinetic Probes.
AD-A092 189/0 1333 PC **A02**/MF **A01**

AFOSR-TR-80-1146
Optimization of Multichannel Processing.
AD-A091 987/8 1358 PC **A02**/MF **A01**

AFOSR-TR-80-1149
Far Infrared Mercury-Cadmium-Telluride Photoconductive Detectors.
AD-A092 073/6 1450 PC **A02**/MF **A01**

AFOSR-TR-80-1152
Final Technical Report, 15 September 1975-14 July 1980,
AD-A091 989/4 1378 PC **A02**/MF **A01**

AFOSR-TR-80-1154
Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354 PC **A02**/MF **A01**

AFOSR-TR-80-1155
Construction of PBIB Designs with Triangular and L2 Schemes.
AD-A092 190/8 1376 PC **A02**/MF **A01**

AFOSR-TR-80-1157
Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376 PC **A07**/MF **A01**

AFOSR-TR-80-1161
A Study of the Association of Pc 3, 4 Micropulsations with Interplanetary Magnetic Field Orientation & Other Solar Wind Parameters.
AD-A092 369/8 1292 PC **A06**/MF **A01**

AFOSR-TR-80-1164
Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376 PC **A03**/MF **A01**

AFOSR-TR-80-1165
Assessing Risks through the Determination of Rare Event Probabilities.
AD-A092 192/4 1376 PC **A03**/MF **A01**

AFOSR-TR-80-1166
Distributions of Some Matrix Variates and Latent Roots in Multivariate Behrens-Fisher Discriminant Analysis.
AD-A091 960/5 1375 PC **A02**/MF **A01**

AFOSR-TR-80-1173
Characterization of Superconductors by Surface Wave Techniques.
AD-A092 387/0 1450 PC **A03**/MF **A01**

AFOSR-TR-80-1174
Chemical and Molecular Biological Aspects of Alkylhydrazine-Induced Carcinogenesis in Human Cells in Vitro.
AD-A092 249/2 1328 PC **A03**/MF **A01**

AFOSR-TR-80-1175
Maintenance Productivity.
AD-A092 250/0 1296 PC **A08**/MF **A01**

AFOSR-TR-80-1176
Strategies for Improving U.S. Air Force Productivity: Developing Methodologies for Assessing the Potential Relationship between Communication Behaviors and Productivity.
AD-A092 370/6 1305 PC **A05**/MF **A01**

AFOSR-TR-80-1177
Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308 PC **A10**/MF **A01**

AFOSR-TR-80-1182
State Space Models for Gaussian Stochastic Processes.
AD-A092 388/8 1377 PC **A03**/MF **A01**

AFOSR-TR-80-1183
Optimal Control of Systems with Uncertainty.
AD-A092 389/6 1377 PC **A02**/MF **A01**

AFOSR-TR-80-1191
Predictive Models of Human Visual Processes in Aerosystems.
AD-A092 290/6 1308 PC **A05**/MF **A01**

AFWAL-TR-80-1057
A Survey of Computer Simulations of Digital Avionics Systems.
AD-A091 943/1 1288 PC **A05**/MF **A01**

AFWAL-TR-80-4094
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
AD-A091 945/6 1369 PC **A03**/MF **A01**

AFWL-TR-79-120-VOL-1-1
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 1.
AD-A091 976/1 1380 PC **A06**/MF **A01**

AFWL-TR-79-120-VOL-1-2
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume I, Application Feasibility. Part 2.
AD-A092 012/4 1380 PC **A05**/MF **A01**

AFWL-TR-79-120-VOL-2
Tunnel Boring Machine Technology for a Deeply Based Missile System. Volume II. State-of-the-Art Review.
AD-A092 013/2 1380 PC **A06**/MF **A01**

AFWL-TR-79-193
QUANTA - Users Manual.
AD-A092 379/7 1403 MF **A01**

AFWL-TR-80-19
Radiation Evaluation of the AM2901A Microprocessor.

AD-A092 415/9 1356 PC A04/MF A01

AGARD-INDEX-77-79
AGARD Index of Publications, 1977 - 1979.
AD-A092 125/4 1402 PC A19/MF A01

AGESS-801002
Structure and Adjustments of the Farming Sector: A Data Base by Regions.
PB81-137705 1291 PC A12/MF A01

AGESS-801022.1
The Impact of Demand-Sensitive Railroad Rates Upon the Storage and Transportation System for U.S. Feed Grains.
PB81-134165 1291 PC A03/MF A01

AGESS-801128
Examination of Farmer-Reported Acreages.
PB81-130874 1291 PC A03/MF A01

AI-M-507
A Hypothetical Monologue Illustrating the Knowledge Underlying Program Analysis.
AD-A092 294/8 1356 PC A03/MF A01

AID-PN-AAG-605
Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica.
PB81-125775 1291 PC A03/MF A01

ALO-35356-2
Superior Heat Transfer Fluids for Solar Heating and Cooling Applications. Final Report, 21 August 1978-31 December 1979. Report MRC-DA-953.
ALO-35356-2 1379 PC A10/MF A01

AMMRC-TR-80-39
Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368 PC A04/MF A01

AMSAA-TM-127
The Delphi Technique and ITS Applicability to Army Systems Analyses.
AD-904 407/4 1378 PC A03/MF A01

ANL/CNSV-TM-42
Industrial Cogeneration Case Study No. 3: Mead Corporation Paper Mill, Kingsport, Tennessee.
ANL/CNSV-TM-42 1364 PC A03/MF A01

ANL/EES-TM-101
Threatened and Endangered Fish and Wildlife of the Midwest.
ANL/EES-TM-101 1316 PC A07/MF A01

ANL-PHY-79-2(REV.1)
Study of a National 2-GeV Continuous Beam Electron Accelerator.
ANL-PHY-79-2(REV.1) 1441 PC A05/MF A01

ANTHROPOLOGY/WP-19
Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica.
PB81-125775 1291 PC A03/MF A01

APC-R-0070/09/00/00
The Improved JCVS.
AD-923 431/1 1356 PC A03/MF A01

APL/JHU/RAD-7718-01
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293 PC A03/MF A01

AR-002-011
Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433 PC A03/MF A01

AR-002-043
Results from Trials of a New Yawsonde Design.
PB81-120222 1434 PC A02/MF A01

AR-79-052-TR
Viscous Flow over Arbitrary Geometries at High Angle of Attack.
AD-A091 971/2 1438 PC A02/MF A01

ARAP-147
Design Manual for Vertical Gusts Based on Power Spectral Techniques.
AD-879 736/7 1289 PC A08/MF A01

ARBRL-MR-02896
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435 PC A03/MF A01

ARBRL-MR-03060
Estimated Effect on Projectile Flight Stability of an Interior Cantilever Beam.
AD-A092 375/5 1432 PC A02/MF A01

ARBRL-MR-03065
Tank Wars General Information Manual.
AD-A092 350/8 1434 PC A02/MF A01

ARBRL-SP-00016
A Congeries of Numerical Models used at the BRL.
AD-A091 886/2 1434 PC A08/MF A01

ARBRL-TR-02262
Franck-Condon Factors for the B-X System of Diatomic Sulfur.
AD-A092 376/3 1334 PC A03/MF A01

ARBRL-TR-02264
Strong Blast Wave Computer Programs.
AD-A092 346/6 1435 PC A04/MF A01

ARBRL-TR-02265
Heat Transfer Measurements in 105 mm Tank Gun with M735 Rounds.
AD-A092 351/6 1436 PC A02/MF A01

ARBRL-TR-02266
WNDWBX: Tektronix Plotting on CDC.
AD-A092 377/1 1356 PC A03/MF A01

ARBRL-TR-02267
Plasma Dynamics of the Arc-Driven Rail Gun.
AD-A092 345/8 1395 PC A04/MF A01

ARBRL-TR-02269
On the Efficiency of Sensitivity Experiments Analyzed by the Maximum Likelihood Estimation Procedure under the Cumulative Normal Response.
AD-A092 349/0 1377 PC A03/MF A01

ARCSL-CR-80031
Development of a Two-Piece Mask and Lens and Mold for Same.
AD-A092 380/5 1326 PC A04/MF A01

ARCSL-CR-80046
Cooperative Effects in Light Scattering from Aerosol Clusters and Surface Assemblies.
AD-A092 378/9 1293 PC A03/MF A01

ARCSL-TR-79002
Survey of Decontamination Methods related to Field Decontamination of Vehicles and Materiel (Abridged).
AD-B031 659/6 1399 PC A03/MF A01

ARI-RN-80-12
Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408 PC A05/MF A01

ARI-RN-80-13
Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408 PC A05/MF A01

ARI-RN-80-14
User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403 PC A03/MF A01

ARI-RN-80-15
Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408 PC A08/MF A01

ARI-RR-174
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333 PC A02/MF A01

ARI-RR-232
Addition of a 5/cm Spectral Resolution Band Model Option to LOWTRAN5.
AD-A091 972/0 1293 PC A11/MF A01

ARI-RR-1232
Soldier Satisfaction with Life in Restructured Units during Phase I of the Restructuring of the Heavy Division Test.
AD-A092 106/4 1308 PC A03/MF A01

ARL/AERO-TM-318
An Improved Flight Data Transcriber.
AD-A091 981/1 1398 PC A03/MF A01

ARL-B-70003
Preliminary Development of an HY-180 Weldment System.
AD-B86 969/5 1370 PC A06/MF A01

ARL/STRUC-TM-321
Strain Measurements on Mirage Wing Spar with BFRP Patch Fitted to Drain-Hole Region.
AD-A091 962/1 1288 PC A02/MF A01

ARLCB-TR-80038
Reprint: Flux Exclusion in CdS at 77 K: Superconductivity at High Temperatures.
AD-A091 997/7 1450 PC A02/MF A01

ARLCD-CR-80016
Steel Erosion Produced by Double Base, Triple Base, and RDX Composite Propellants of Various Flame Temperatures.
AD-A092 344/1 1435 PC A03/MF A01

ARLCD-CR-80022
Safety Analysis of X4 Multi-Tooled Iowa Detonator Loader.
AD-A092 416/7 1432 PC A05/MF A01

ARLCD-SP-80006
Manufacturing Methods and Technology (MMT) Program for FY 80, Large Caliber Weapons System Laboratory, ARRADCOM.
AD-A091 988/6 1431 MF A01

ARLCD-SP-80007
Analytical Chemistry of 2,4,6-Trinitrotoluene.
AD-A092 348/2 1432 PC A03/MF A01

ARO-12487.5-MS
Reprint: High-Temperature, Multi-Atmosphere, Constant Stress Compression Creep Apparatus.
AD-A092 496/9 1367 Not available NTIS

ARO-13237.8-GS
Reprint: General Morphology and Sediment Patterns in Tidal Inlets.
AD-A092 115/5 1341 Not available NTIS

ARO-13237.15-GS
Influence of Wave Refraction on Coastal Geomorphology-Bull Island to Isle of Palms, South Carolina.
AD-A091 913/4 1341 PC A10/MF A01

ARO-13630.3-MSX
Molecular Fraction Behavior in Oriented Polymers.
AD-A092 241/9 1373 PC A07/MF A01

ARO-13737.3-EX
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454 PC A05/MF A01

ARO-13838.1-GS
Interaction Effects of Simultaneous Torsional and Compressional Cyclic Loading of Sand.
AD-A092 352/4 1350 MF A01

ARO-13971.8-GS
Reprint: A Digital Image System for Atmospheric Research.
AD-A092 489/4 1356 Not available NTIS

ARO-14035.41-M
Reprint: Nonlinearly Perturbed Volterra Equations.
AD-A092 495/1 1377 Not available NTIS

ARO-14100.1-E
Nonlinear Analysis of Squeeze Film Dampers Applied to Gas Turbine Helicopter Engines.
AD-A091 905/0 1454 PC A02/MF A01

ARO-14169.2-L
Reprint: Response to Fertilization by Various Plant Growth Forms in an Alaskan Tundra: Nutrient Accumulation and Growth.
AD-A092 116/3 1316 Not available NTIS

ARO-14483.12M
Approximate Linear Regulator and Kalman Filter.
AD-A092 176/7 1376 PC A07/MF A01

ARO-14557.12-C
Reprint: Polarography of a Cobalt(III) Complex of Poly(4-Vinylpyridine).
AD-A092 117/1 1373 Not available NTIS

ARO-14698.6-EL
Research in Monolithic, Signal-Processing Circuits.
AD-A091 902/7 1358 PC A02/MF A01

ARO-14766.2-MS
Reprint: Adatom Mobility on the Surface Planes of a Simple Metal.
AD-A092 118/9 1333 Not available NTIS

ARO-14771.8-C
Reprint: Quadratic Jahn-Teller Coupling in Octahedral Systems.
AD-A092 119/7 1333 Not available NTIS

ARO-14771.8-C
Reprint: Raman Spectra of SiF4 and GeF4 Crystals.
AD-A092 332/6 1334 Not available NTIS

ARO-14771.9-C
Reprint: The Jahn-Teller Effect in the Lowest Charge Transfer State of UF6.
AD-A092 333/4 1334 Not available NTIS

ARO-14771.10-C
Reprint: On the Jahn-Teller Effect in ReF6.
AD-A092 334/2 1334 Not available NTIS

ARO-14771.11-C
Reprint: Raman Scattering of Neat and Mixed Crystals of IrF6: the Jahn-Teller Interaction in the Ground State.
AD-A092 335/9 1334 Not available NTIS

ARO-14771.12-C
Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. I. Orthorhombic MoF6, WF6, and UF6 Neat Crystals.
AD-A092 336/7 1334 Not available NTIS

ARO-14771.13-C
Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. II. Two-Particle and Mixed Crystal Spectra as Techniques for Determination of Densities of States.
AD-A092 337/5 1334 Not available NTIS

ARO-14771.14-C
Reprint: Vibrational Spectra of Transition Metal Hexafluoride Crystals. III. Exciton Band Structures of MoF6, WF6 and UF6.
AD-A092 338/3 1334 Not available NTIS

ARO-14889.3-MS
Reprint: Modification of the Hillig-Charles Theory for Static Fatigue of Glass.
AD-A092 492/8 1367 Not available NTIS

ARO-14889.4-MS
Reprint: Importance of Crack Tip Radii in Fracture and Fatigue of Glass.
AD-A092 493/6 1367 Not available NTIS

ARO-15278.10-P
Reprint: Remote Single-Ended Measurements of Atmospheric Temperature and Humidity at 1.77 Micrometers Using a Continuously Tunable Source.
AD-A092 121/3 1294 Not available NTIS

ARO-15336.2-E
Reprint: Boundary Layer and Side Force Characteristics of a Spinning Axisymmetric Body.
AD-A092 494/4 1438 Not available NTIS

ARO-15642.5-E
AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455 PC A04/MF A01

NTIS ORDER/REPORT NUMBER INDEX

ARO-15746.4-MS
Reprint: Scanning Photoacoustic Microscopy for Nondestructive Evaluation.
AD-A092 490/2 1396 PC **A02**/MF **A01**

ARO-15974.1-EL
Hardware Realizations for Digital Signal Processing.
AD-A091 304/3 1359 PC **A02**/MF **A01**

ARO-16011.5-EL
Reprint: Threshold Effect on Error Probability in QAM Systems.
AD-A092 122/1 1408 PC **A02**/MF **A01**

ARO-16011.8-EL
Reprint: Memoryless Quantizer-Detectors for Constant Signals in m-Dependent Noise.
AD-A092 123/9 1358 PC **A02**/MF **A01**

ARO-16011.10-EL
Reprint: Optimal Design of FIR Digital Filters with Monotone Passband Response.
AD-A092 124/7 1359 PC **A02**/MF **A01**

ARO-16011.12-EL
Reprint: A Note on Variable Recursive Digital Filters.
AD-A092 131/2 1359 PC **A02**/MF **A01**

ARO-16171.2-EL
Reprint: Spectral Domain Analysis of Dominant and Higher Order Modes in Fin-Lines.
AD-A092 120/5 1351 Not available NTIS

ARO-16219.1-MS
An Investigation of the Structure and Mechanical Properties of High Temperature Glassy and Microcrystalline Alloys.
AD-A092 251/8 1367 PC **A03**/MF **A01**

ARO-16719.2-E
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454 PC **A05**/MF **A01**

ARO-16984.1-A-EL
Network Management Research.
AD-A092 055/3 1407 PC **A04**/MF **A01**

ARO-17042.1-C
Reprint: Collision Activated Decompositions of Negative Ions in Mixture Analysis with a Triple Quadrupole Mass Spectrometer.
AD-A092 497/7 1335 Not available NTIS

ARRO-R79-8
Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305 PC **A03**/MF **A01**

ARRO-3038-FR
Comparison of Male and Female Performance Evaluation Narratives.
AD-A092 418/3 1305 PC **A03**/MF **A01**

ARTSD-TR-80001
Electrostatic Propensity of Garments Made of Nomex with One Percent Metal Fibers Compared with Flameproof Cotton.
AD-A092 347/4 1437 PC **A04**/MF **A01**

ASD/XR-73-19
Aircraft Avionics Tradeoff Study.
AD-917 204/0 1358 PC **A19**/MF **A01**

ATR-80(8374)-1
Military Wastes-to-Energy Applications.
PB81-132227 1386 PC **A09**/MF **A01**

AVRADCOM-TR-80-13
Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455 PC **A02**/MF **A01**

AWRE-O-21/80
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach.
AD-A091 933/2 1359 PC **A04**/MF **A01**

BA-09005-642-002
Evaluation and Analysis of the Concept Testing of Portable Urinalysis Kits.
AD-B043 559/4 1324 PC **A07**/MF **A01**

BARC-1000
ENDF/B Based 27-Group Cross-Sections for Some Rare-Earth and Concrete Elements.
INDC(IND)-25/GV 1422 PC **A03**/MF **A01**

BAW-1609
Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/Sub-7496/1 1430 PC **A10**/MF **A01**

BBN-4473
ARPANET Routing Algorithm Improvements. Volume I.
AD-A092 065/2 1407 PC **A22**/MF **A01**

BBN-10667-10676
A Guidance Document on Airport Noise Control.
AD-A092 228/6 1290 PC **A08**/MF **A01**

BDM/W-79-662-TR
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403 PC **A05**/MF **A01**

BDX-613-2510
Preparation and Properties of an Internal Mold Release for Rigid Urethane Foam.
BDX-613-2510 1373 PC **A02**/MF **A01**

BEI-78-M03
Laser Transmissometer, Installation, Alignment and Instruction Manual.
AD-A092 041/3 1395 MF **A01**

BLM/YM/ES-76/8
Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340 PC **A99**/MF **A01**

BN-SA-1064
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379 PC **A03**/MF **A01**

BNL-NCS-50496(ED.2)
Data Formats and Procedures for the Evaluated Nuclear Data File, ENDF.
BNL-NCS-50496(ED.2) 1441 PC **A24**/MF **A01**

BNL-NCS-51184
Evaluation of exp 235 U Neutron Cross Section and gamma Ray Production Data for ENDF/B-V.
BNL-NCS-51184 1442 PC **A04**/MF **A01**

BNL-NUREG-26903
PWR Steamline Break Analysis Assuming Concurrent Steam Generator Tube Rupture.
BNL-NUREG-26903 1427 PC **A02**/MF **A01**

BNL-NUREG-51266
Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424 PC **A03**/MF **A01**

BNL-28193
Keynote Address at the International Conference on Nuclear Waste Transmutation.
BNL-28193 1423 PC **A02**/MF **A01**

BNL-28288
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427 PC **A02**/MF **A01**

BNL-28292
Pumping Behavior of Sputter Ion Pumps.
BNL-28292 1441 PC **A02**/MF **A01**

BNL-28301
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420 PC **A02**/MF **A01**

BNL-28305
Unique Parity States in exp 109 Pd as a Test of Particle-Rotor and IBFA Models.
BNL-28305 1442 PC **A02**/MF **A01**

BNL-28323
Acceleration of Polarized Proton at the AGS.
BNL-28323 1441 PC **A02**/MF **A01**

BNL-28332
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335 PC **A03**/MF **A01**

BNL-28347
Atmospheric Oxidation of Sulfur Dioxide as Viewed from Power Plant and Smelter Plume Studies.
BNL-28347 1335 PC **A03**/MF **A01**

BNL-28353
Search for Narrow Anti Pp States in the Reaction pi exp - p Implies p pi exp - Anti Pp at 16 GeV/C.
BNL-28353 1442 PC **A02**/MF **A01**

BNL-28357
Problem of Phase Transitions in Nuclear Structure.
BNL-28357 1442 PC **A02**/MF **A01**

BNL-28363
Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315 PC **A03**/MF **A01**

BNL-28375
Bend Strain Tolerances of a Nb sub 3 Sn Conductor Proposed for Use in the Magnetic Fusion Energy Program.
BNL-28375 1414 PC **A02**/MF **A01**

BNL-28423
Energetic Control of Intact Chloroplast Photosynthesis.
BNL-28423 1315 PC **A02**/MF **A01**

BNL-28428
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319 PC **A03**/MF **A01**

BNL-51188
Proceedings of Brookhaven National Laboratory's Fusion/Synfuel Workshop.
BNL-51188 1414 PC **A07**/MF **A01**

BNL-51224(V.1)
Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction. Volume 1.
BNL-51224(V.1) 1344 PC **A04**/MF **A01**

BNL-51224(V.2)
Economic Impact of Using Nonmetallic Materials in Low to Intermediate Temperature Geothermal Well Construction.
BNL-51224(V.2) 1344 PC **A06**/MF **A01**

BRL-MR-2509
Calculations of Fragment Velocities from Naturally Fragmenting Munitions.
AD-B007 377/5 1435 PC **A03**/MF **A01**

BRL-MR-2631
Millimeter Wave Radar Applications to Weapons Systems.
AD-B012 103/8 1413 PC **A06**/MF **A01**

BRL-6633
Off-Line Orthographic Printer.
AD-919 575/1 1399 PC **A06**/MF **A01**

BUMINES-OFR-110-80
An Interactive Computer System for Evaluating Coal Mine Illumination.
PB81-125528 1348 PC **A02**/MF **A01**

BUMINES-OFR-125-80
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300 PC **A08**/MF **A01**

BUMINES-OFR-131-80
Interactive Mine-Power-System Analysis--APL Fault Program.
PB81-130858 1348 PC **A06**/MF **A01**

BUMINES-OFR-132-80
Steering System Survey for Surface Mining Equipment.
PB81-130866 1348 PC **A09**/MF **A01**

BUMINES-OFR-133-80
Noise Reduction of Chain Conveyors. Volume I.
PB81-130833 1348 PC **A07**/MF **A01**

BUMINES-OFR-136-80
Field Test of Hydraulic Borehole Mining Systems in Shallow Uranium Sands.
PB81-128969 1348 PC **A10**/MF **A01**

BUP-104
Form Factor and Multistep-Transfer Effects in Light-Ion and Heavy-Ion Induced Transfer Reactions on Rotational and Transitional Nuclei.
BUP-104 1442 PC **A03**/MF **A01**

C-375
Warmtebesparing door Isolatie en Stookwijze Bereikt in Twee Woningen-Woning II (Heat Savings by Insulation and Usage of the Heating System Achieved in Two Houses).
PB81-125197 1363 PC **A03**/MF **A01**

CACDA-TR-8-77
An HP-67 Combat Model.
AD-A091 992/8 1402 PC **A03**/MF **A01**

CAL-UB-1088-P-103
Error Analysis of Ruby Radar Cross Section Measurement System.
AD-A950 100/8 1413 MF **A01**

CALSPAN-6486-A-1
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.
AD-A092 229/4 1454 PC **A04**/MF **A01**

CALT-68-792
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446 PC **A02**/MF **A01**

CAORF-50-7810-01-VOL-1
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303 PC **A04**/MF **A01**

CAORF-50-7810-01-VOL-2
Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304 PC **A99**/MF **A01**

CASAA-TR-11-80
Army 86 Cost Sensitivity Analysis Verification.
AD-A091 889/6 1401 PC **A04**/MF **A01**

CBI/SR-78
On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
PB81-132094 1340 PC **A07**/MF **A01**

CBPF-A0002/79
Microprobe Observations on the Santa Catharina Meteorite.
CBPF-A0002/79 1292 PC **A02**/MF **A01**

CBPF-A0003/79
Instability of the Paramagnetic Phase of the Iron-Nickel Alloys in Meteorites Towards Martensitic Transformation.
CBPF-A0003/79 1292 PC **A02**/MF **A01**

CBPF-A0004/79
Moessbauer Studies of the Superstructure Fe-Ni 50-50 in the Santa Catharina Meteorite at High Magnetic Fields.
CBPF-A0004/79 1292 PC **A02**/MF **A01**

CBPF-A0008/79
Iron-Nickel Alloy Superstructures in the Mineral Josephinite.
CBPF-A0008/79 1342 PC **A02**/MF **A01**

CBPF-A0009/79
Note on the Differential Thermal Analysis of Amazonian Archeological Pottery.
CBPF-A0009/79 1302 PC **A02**/MF **A01**

CCTC-TM-181-78-REV
Generalized Monitoring Facility. Revision I. Installation Guide (W6.4.1).

AD-B031 430/2 1356 PC A02/MF A01

CE-STR-80-9
Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons,
PB81-120032 1350 PC A04/MF A01

CE-STR-80-12
Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
PB81-120065 1350 PC A04/MF A01

CEA-CONF-4696
Research on TFR.
CEA-CONF-4696 1414 PC A03/MF A01

CEA-CONF-4753
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442 PC A02/MF A01

CEA-CONF-4757
Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335 PC A02/MF A01

CEA-CONF-4801
Tests on Mechanical Behavior of 304 L Stainless Steel under Constant Stress Associated with Cyclic Strain.
CEA-CONF-4801 1370 PC A02/MF A01

CEA-CONF-4808
Raman and I.R. Spectra of the NH and ND Stretching Region in Polycristalline Imidazole, exp 15 N and D Substituted Analogs.
CEA-CONF-4808 1335 PC A02/MF A01

CEA-R-5000
Isotopic Exchange Reactions. Kinetics and Efficiency of the Reactors Using Them in Isotopic Separation.
CEA-R-5000 1420 PC A03/MF A01

CEA-R-5006
Contribution to Research on the Elastic and Elastoplastic Behavior of Porous Materials.
CEA-R-5006 1373 PC A17/MF A01

CEA-R-5013
Quantitative Analysis of Carbon in Plutonium.
CEA-R-5013 1335 PC A04/MF A01

CEA-R-5020
Study of the Kinetics of Oxygen Redistribution in UOsub(2+ X) and UCeO sub 2 Due to a Temperature Gradient.
CEA-R-5020 1336 PC A05/MF A01

CEEDO-TR-78-21
Exploratory Development of Coated Fabric for Fire Proximity Suits.
AD-B029 209/4 1369 PC A03/MF A01

CEGB-RD/B/N-4667
Exp 235 U Fission Product gamma Spectra: A Comparison Between Experiment and Calculation.
CEGB-RD/B/N-4667 1442 PC A04/MF A01

CENBG-7809
Dynamical Aspect of Fission Mechanism. Study of the exp 237 Np(N,F) Reaction Induced by Neutron Energies Between 0.5 and 1.75MeV.
CENBG-7809 1442 PC A06/MF A01

CENBG-7919
Analysis of a Quasi-Molecular Type Dissociation Involving Three Charged Fragments. Observation and Discussion of the Production of alpha Particles at Rest from the exp 12 C- alpha - exp 12 C Structure.
CENBG-7919 1442 PC A07/MF A01

CENBG-7922
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442 PC A02/MF A01

CENBG-7932
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442 PC A02/MF A01

CERC-REPRINT-80-3
Reprint: Sand Motion Initiation by Water Waves: Two Asymptotes.
AD-A092 045/4 1341 PC A02/MF A01

CERC-TP-80-5
Experimental Dune Restoration and Stabilization, Nauset Beach, Cape Cod, Massachusetts.
AD-A092 110/6 1340 PC A03/MF A01

CERL-TR-N-93
Analysis of Flue Gas Desulfurization (FGD) Processes for Potential Use on Army Coal-Fired Boilers.
AD-A092 132/0 1381 PC A06/MF A01

CERL-TR-P-112-VOL-1
Type II Forward Storage Site Facilities. POMCUS System. Volume 1.
AD-A092 310/2 1401 PC A99/MF A01

CID-77-2
Infrared Thermometry and the Telatemp 44 as a Ship System Maintenance Monitoring Tool.
AD-B018 764/1 1393 PC A04/MF A01

CIR/BOSTID-80/SRI
Postharvest Food Losses in Sri Lanka; Report of a Workshop, 11-16 February 1980.
PB81-129975 1323 PC A04/MF A01

CJ-0756-A
Bathymetric Data Reduction System.
AD-A091 942/3 1348 PC A09/MF A01

CNA-PP-291
Some Extensions of the Nerlove-Press Model.
AD-A091 946/4 1375 PC A02/MF A01

CNSR-8
Personnel Management in the All-Volunteer Force Study.
AD-A092 108/0 1304 PC A03/MF A01

CNVR/80-01
Overcoming Land Use Barriers to Solar Access: Solar Planning Recommendations for Local Communities.
PB81-127359 1385 PC A07/MF A01

CONF-770907-9
Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429 PC A02/MF A01

CONF-790255-1
Research on TFR.
CEA-CONF-4696 1414 PC A03/MF A01

CONF-790707-37
Performance of a Prototype Spent Fuel Bundle Counter for 600 MW CANDU Reactors.
AECL-6587 1429 PC A02/MF A01

CONF-790765-7
Fission Fragment Angular Distribution Measurement with Plastic Track Detectors.
CENBG-7922 1442 PC A02/MF A01

CONF-790774-
Quantum Chromodynamics.
SLAC-224 1447 PC A99/MF A01

CONF-790820-4
Tests on Mechanical Behavior of 304 L Stainless Steel under Constant Stress Associated with Cyclic Strain.
CEA-CONF-4801 1370 PC A02/MF A01

CONF-791082-(SUM.)
Highway Vehicle Systems Contractors Coordination Meeting. Seventeenth Summary Report.
CONF-791082-(SUM.) 1453 PC A99/MF A01

CONF-791219-8
Overall View of Charged Particle Emission in the Reactions of 340 MeV exp 40 Ar with Several Targets.
CENBG-7932 1442 PC A02/MF A01

CONF-791248-
High Temperature Electronics and Instrumentation Seminar Proceedings.
SAND-80-0834C 1348 PC A11/MF A01

CONF-800212-
Energy in the '80S: Decade of Decision.
CONF-800212- 1362 PC A05/MF A01

CONF-800329-
Workshop on Nuclear Dynamics.
LBL-10688 1445 PC A08/MF A01

CONF-800425-7
Speciation of Trace Organic Ligands and Inorganic and Organometallic Compounds in Oil Shale Process Waters.
LBL-11167 1454 PC A02/MF A01

CONF-800427-19(DR)
Implications of Tritium in Neutral Beam Injectors.
CONF-800427-19(DR) 1414 PC A02/MF A01

CONF-800555-3
Recent Laser-Plasma Interaction Experiments at the Lawrence Livermore National Laboratory.
UCRL-83794 1419 PC A03/MF A01

CONF-800607-87(DR)
Fission Product Release from High GAP-Inventory LWR Fuel under LOCA Conditions.
CONF-800607-87(DR) 1423 PC A02/MF A01

CONF-800607-88
Failure Analysis of Carbide Fuels under Transient Overpower (TOP) Conditions.
HEDL-SA-2006-FP 1429 PC A03/MF A01

CONF-800609-15
State Variable Description of 316 SS Post-Irradiation Mechanical Properties.
HEDL-SA-2174 1429 PC A03/MF A01

CONF-800641-7
Observation of Dislocations and Twins in Explosively Compacted Alumina.
CONF-800641-7 1367 PC A02/MF A01

CONF-800641-8
Active Measurements of Defect Processes in Shock Compressed Metals and Other Solids.
SAND-80-1945C 1372 PC A02/MF A01

CONF-800648-16
GCFR Steam Generator Conceptual Design.
GA-A-15894 1428 PC A02/MF A01

CONF-800678-2
Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446 PC A03/MF A01

CONF-800707-23
Rapporteur Talk for IAEA Fusion Meeting, Brussels.
LBL-11429 1417 PC A02/MF A01

CONF-800709-4
Pion Production in Nucleus-Nucleus Collisions Below a Few GeV/Nucleon: Past, Present and Future.
LBL-10899 1445 PC A05/MF A01

CONF-800724-33
Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446 PC A02/MF A01

CONF-800724-38
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446 PC A02/MF A01

CONF-800724-39
Low Energy Weak Interactions and Decays.
LBL-11510 1445 PC A03/MF A01

-CONF-800724-40
Open and Hidden Charm Muoproduction.
LBL-11561 1446 PC A02/MF A01

CONF-800724-41
Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446 PC A04/MF A01

CONF-800724-43
Hadronic Decays of the eta/sub C/.
SLAC-PUB-2594 1446 PC A02/MF A01

CONF-800724-44
Normalizing the Renormalization Group in Deep Inelastic Leptoproduction. CTP No. 878.
CONF-800724-44 1443 PC A02/MF A01

CONF-800724-45
Difficult States in the Quark Model: Glueballs and the Pion. CTP No. 874.
CONF-800724-45 1443 PC A02/MF A01

CONF-800743-13
Keynote Address at the International Conference on Nuclear Waste Transmutation.
BNL-28193 1423 PC A02/MF A01

CONF-800770-1
ETF Interim Design Review.
CONF-800770-1 1414 PC A12/MF A01

CONF-800804-27
Experience with Simplified Inelastic Analysis of Piping Designed for Elevated Temperature Service.
HEDL-SA-1933 1428 PC A02/MF A01

CONF-800804-28
Seismic Analysis of Piping with Nonlinear Supports.
HEDL-SA-1994-FP 1428 PC A02/MF A01

CONF-800804-29
Seismic Transient Analysis of a Containment Vessel with Penetrations.
HEDL-SA-1955 1428 PC A03/MF A01

CONF-800804-31
Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428 PC A02/MF A01

CONF-800814-22(DR)
Production of Transplutonium Elements in the High Flux Isotope Reactor (HFIR).
CONF-800814-22(DR) 1420 PC A03/MF A01

CONF-800814-25
Formulas for Calculating the Heating Value of Coal and Coal Char: Development, Tests, and Uses.
CONF-800814-25 1452 PC A02/MF A01

CONF-800824-23
Parity Violation in Polarized Electron Scattering.
SLAC-PUB-2619 1447 PC A02/MF A01

CONF-800824-24
Polarized Proton Radiative Capture Studies of Giant Resonances.
DOE/ER/01388-454 1443 PC A02/MF A01

CONF-800829-8
Synthesis of Quantum Chromodynamics and Nuclear Physics.
SLAC-PUB-2595 1446 PC A02/MF A01

CONF-800859-5
Theory of Core Excitons.
DOE/ER/01198-1323 1450 PC A02/MF A01

CONF-800863-3
Delta -Nucleus Interactions. CTP No. 887.
CONF-800863-3 1443 PC A02/MF A01

CONF-800863-4
New Results on the Spectroscopy and Dynamics of Fission.
DOE/ER/01388-452 1443 PC A02/MF A01

CONF-800870-1
Helium-Jet Coupled Mass Separator: Advances and Directions.
CONF-800870-1 1420 PC A02/MF A01

CONF-800870-3
Advances in the Helium-Jet Coupled on-Line Mass Separator RAMA.
BNL-28301 1420 PC A02/MF A01

CONF-800874-1(DR)
Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.
ORNL/TM-7124(Dr) 1417 PC A03/MF A01

CONF-800942-4
Analysis of the New GCFR Upper and Lower Plenum Flow-Through Shields.

CONF-800942-4 1422 PC **A02**/MF **A01**

CONF-800942-10
Developments in Sensitivity Theory.
CONF-800942-10 1430 PC **A02**/MF **A01**

CONF-800942-11
Intermediate Structure in Unresolved Resonances of Fissile and Fertile Nuclides.
LA-UR-80-2675 1445 PC **A02**/MF **A01**

CONF-800942-12
Breeder Design for Enhanced Performance and Safety Characteristics.
BNL-28288 1427 PC **A02**/MF **A01**

CONF-800942-14
Systematic Methodology for the Reduction of Uncertainties in Transient Thermal-Hydraulics by Using in-Bundle Measurement Data.
CONF-800942-14 1427 PC **A02**/MF **A01**

CONF-800943-17
Safety Evaluation of a Conceptual Fuel Recycle Complex.
DP-MS-80-6 1429 PC **A02**/MF **A01**

CONF-800963-5
Function and Mechanism of Cyclic Electron Transport.
BNL-28363 1315 PC **A03**/MF **A01**

CONF-800963-6
Energetic Control of Intact Chloroplast Photosynthesis.
BNL-28423 1315 PC **A02**/MF **A01**

CONF-800964-3
Design and Operation of the Sandia Pilot Plant.
SAND-80-1954C 1388 PC **A03**/MF **A01**

CONF-800971-1
Assessment of Light Water Reactor Fuel Damage During a Reactivity Initiated Accident.
CONF-800971-1 1422 PC **A04**/MF **A01**

CONF-800971-2
Safety and Licensing Issues That Are Being Addressed by the Power Burst Facility Test Programs.
CONF-800971-2 1427 PC **A03**/MF **A01**

CONF-800979-5
Systematics of S- and P-Wave Radiation Widths.
LA-UR-80-2702 1423 PC **A02**/MF **A01**

CONF-800979-6
Prompt Fission Neutron Spectra and Anti nu p.
LA-UR-80-2707 1423 PC **A03**/MF **A01**

CONF-800979-8
Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
HEDL-SA-2227-FP 1444 PC **A02**/MF **A01**

CONF-800980-15
Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
GA-A-16013 1416 PC **A02**/MF **A01**

CONF-800980-18
Bend Strain Tolerances of a Nb sub 3 Sn Conductor Proposed for Use in the Magnetic Fusion Energy Program.
BNL-28375 1414 PC **A02**/MF **A01**

CONF-800980-20
Protection for Low Current Superconducting Coils Wound with Insulated Strand Cable.
CONF-800980-20 1352 PC **A02**/MF **A01**

CONF-800983-1
High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428 PC **A02**/MF **A01**

CONF-800987-1
Leaching Properties and Chemical Compositions of Calcines Produced at the Idaho Chemical Processing Plant.
CONF-800987-1 1423 PC **A02**/MF **A01**

CONF-800989-1
Large-Scale Experimental Evaluation of an Advanced Concept for Dry/Wet Cooling of Power Stations.
BN-SA-1064 1379 PC **A03**/MF **A01**

CONF-800994-1
Acceleration of Polarized Proton at the AGS.
BNL-28323 1441 PC **A02**/MF **A01**

CONF-800994-2
High Intensity Polarized Electron Sources.
SLAC-PUB-2621 1441 PC **A02**/MF **A01**

CONF-801002-9
PWR Steamline Break Analysis Assuming Concurrent Steam Generator Tube Rupture.
BNL-NUREG-26903 1427 PC **A02**/MF **A01**

CONF-801004-3
Verification of Timing Routines.
LA-UR-80-3099 1357 PC **A02**/MF **A01**

CONF-801011-3
ORNL Fusion Reactor Shielding Integral Experiments.
CONF-801011-3 1415 PC **A02**/MF **A01**

CONF-801011-4
Consistent HYLIFE Wall Design That Withstands Transient Loading Conditions.
UCRL-84271 1419 PC **A02**/MF **A01**

CONF-801011-5
ETF System Code: Composition and Applications.
CONF-801011-5 1415 PC **A02**/MF **A01**

CONF-801011-6
Technology of Direct Conversion for Mirror Reactor End-Loss Plasma.
UCRL-84235 1419 PC **A02**/MF **A01**

CONF-801011-7
MFTF-Progress and Promise.
UCRL-85002 1420 PC **A02**/MF **A01**

CONF-801011-8
ICF ETF And Its Engineering Development Requirements.
UCRL-84275 1419 PC **A02**/MF **A01**

CONF-801011-9
Properties of Lead-Lithium Solutions.
UCRL-84273 1419 PC **A02**/MF **A01**

CONF-801011-10
Configurational Analysis of an EBT Reactor in Various Magnetic Geometries.
CONF-801011-10 1414 PC **A02**/MF **A01**

CONF-801011-12
Parametric Analysis of Stress in the ICF HYLIFE Converter Structure.
UCRL-84272 1419 PC **A02**/MF **A01**

CONF-801011-13
Buildup Studies of a Tandem Mirror Reactor with Inboard Thermal Barriers.
UCRL-84233 1419 PC **A02**/MF **A01**

CONF-801011-14
Radiation Shielding Information Center: A Source of Computer Codes and Data for Fusion Neutronics Studies.
CONF-801011-14 1415 PC **A02**/MF **A01**

CONF-801011-15
ETF Design Activities: Status and Future Direction.
CONF-801011-15 1415 PC **A03**/MF **A01**

CONF-801011-28
Preliminary Radiation Criteria and Nuclear Analysis for ETF.
GA-A-16072 1416 PC **A02**/MF **A01**

CONF-801011-30
First Wall Engineering and Technology in Fusion.
GA-A-16089 1416 PC **A02**/MF **A01**

CONF-801011-31
Vacuum Pumping Concepts for ETF.
GA-A-16071 1393 PC **A02**/MF **A01**

CONF-801027-2
STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421 PC **A02**/MF **A01**

CONF-801034-2
Effects of Processing Variables on the Product Quality of Large-Scale Glass Forms Containing Simulated SRP Waste.
DP-MS-80-50 1423 PC **A02**/MF **A01**

CONF-801036-5
Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429 PC **A03**/MF **A01**

CONF-801037-16
Pumping Behavior of Sputter Ion Pumps.
BNL-28292 1441 PC **A02**/MF **A01**

CONF-801037-19
Recent Advances in Pt Coating of Microspheres by a Batch Magnetron Sputtering Process.
UCRL-84478 1420 PC **A02**/MF **A01**

CONF-801037-20
Metallic Coating of Microspheres.
UCRL-84463 1420 PC **A03**/MF **A01**

CONF-801037-21
ETF Reactor Design Status.
CONF-801037-21 1415 PC **A03**/MF **A01**

CONF-801038-3
Index to the AEC/ERDA/DOE Air Cleaning Conferences.
CONF-801038-3 1426 PC **A02**/MF **A01**

CONF-801038-4
Volatilities of Ruthenium, Iodine, and Technetium on Calcining Fission Product Nitrate Wastes.
CONF-801038-4 1423 PC **A03**/MF **A01**

CONF-801039-2
Benzene Inhalation Effects Upon Tetanus Antitoxin. Responses and Leukemogenesis in Mice.
BNL-28428 1319 PC **A03**/MF **A01**

CONF-801056-5
Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327 PC **A02**/MF **A01**

CONF-801068-2
Negative Deuterium Ions for Tandem Mirror Next Step and Tandem Mirror Reactors.
UCRL-84888 1420 PC **A02**/MF **A01**

CONF-801077-1
Technical Developments in the WIPP Program.
SAND-80-1599C 1425 PC **A03**/MF **A01**

CONF-801079-2
Materials for Conoco Zinc Chloride Hydrocracking Process.
CONF-801079-2 1453 PC **A02**/MF **A01**

CONF-801090-2
State-of-the-Art Assessment of Slurry Pumps in Coal Conversion Applications.
CONF-801090-2 1393 PC **A03**/MF **A01**

CONF-801090-3
State-of-the-Art Assessments on Critical Coal Conversion Equipment.
CONF-801090-3 1330 PC **A03**/MF **A01**

CONF-801102-1
Results and Predictions of Scaled, Nuclear Large Break Loss-of-Coolant Experiments.
CONF-801102-1 1427 PC **A03**/MF **A01**

CONF-801102-12
Experimental Determination of Lower Plenum ECC Injection Effectiveness.
CONF-801102-12 1427 PC **A02**/MF **A01**

CONF-801102-14
Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
UCRL-84153 1425 PC **A02**/MF **A01**

CONF-801107-1
Response of LOFT SPNDs to Reactor Coolant Density Variations During a LOCA Simulation.
CONF-801107-1 1427 PC **A02**/MF **A01**

CONF-801113-3
Teaching the Originator to Make Whoopie.
CONF-801113-3 1298 PC **A02**/MF **A01**

CONF-801114-6
Atmospheric Oxidation of Sulfur Dioxide as Viewed from Power Plant and Smelter Plume Studies.
BNL-28347 1335 PC **A03**/MF **A01**

CONF-801114-7
Model for Stack Plume Reactions with Atmospheric Dilution (SPREAD).
BNL-28332 1335 PC **A03**/MF **A01**

CONF-801119-(EXC.)(ABSTS.)
Abstracts of Papers Presented at the Twenty-Second Annual Meeting of the Division of Plasma Physics of the American Physical Society.
DOE/ET/53051-8 1416 PC **A02**/MF **A01**

CONF-801121-2
STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421 PC **A02**/MF **A01**

CONF-801127-1
Influence of Air Motion Variation on the Performance of a Direct-Injection Stratified-Charge Engine.
SAND-79-8756 1456 PC **A02**/MF **A01**

CONF-801203-1
Photovoltaic Power System at Natural Bridges National Monument.
DOE/ET/20279-105 1365 PC **A02**/MF **A01**

CONF-801208-2
Impact of Land Use on Solar Industrial Process Heat for the Food Processing Industry.
UCRL-85019 1388 PC **A02**/MF **A01**

CONF-7505145-1
100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
DOE/NASA/9235-75/3 1362 PC **A02**/MF **A01**

CONF-7804179-
Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343 PC **A09**/MF **A01**

CONF-7906175-1
Photopion Production from Nuclei in the Energy Region of the delta Resonance.
CEA-CONF-4753 1442 PC **A02**/MF **A01**

CONF-7908120-1(ABST.)
Electrolytic Separation of Niobium and Tantalum in Fused Fluorides.
CEA-CONF-4757 1335 PC **A02**/MF **A01**

CONF-7908127-
Proceedings of Brookhaven National Laboratory's Fusion/Synfuel Workshop.
BNL-51188 1414 PC **A07**/MF **A01**

CONF-7910122-
Proceedings of the Heavy Ion Fusion Workshop.
LBL-10301 1441 PC **A23**/MF **A01**

CONF-7911108-
Proceedings of the Workshop/Symposium on the Preliminary Evaluation of the Ionospheric Disturbances Associated with the HEAO-C Launch, with Applications to the SPS Environmental Assessment.
CONF-7911108- 1294 PC **A12**/MF **A01**

CONF-8004102-6
Search for Narrow Anti Pp States in the Reaction pi exp - p Implies p pi exp - Anti Pp at 16 GeV/C.
BNL-28353 1442 PC **A02**/MF **A01**

CONF-8006108-3
Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446 PC **A03**/MF **A01**

CONF-8006126-1
New Experimental Evidence for a New Interpretation of Flavor SU(3).

DOE/ER/03992-402 1444 PC A02/MF A01

CONF-8006127-1
Problem of Phase Transitions in Nuclear Structure.
BNL-28357 1442 PC A02/MF A01

CONF-8006127-2
Unique Parity States in exp 109 Pd as a Test of Particle-Rotor and IBFA Models.
BNL-28305 1442 PC A02/MF A01

CONF-8010106-2
Interactive Code for Examining Hypothetical Distributions of Experimental Data.
CONF-8010106-2 1357 PC A02/MF A01

CONF-8010108-2
Empirical Observations in Support of Carcinogenic Promotion as a Tool for Screening and Regulation of Toxic Agents.
CONF-8010108-2 1319 PC A02/MF A01

CONF-8010108-3
Covalent Modification of Nuclear and Cytoplasmic Proteins of Hamster Embryo Cells During PAH Metabolism.
CONF-8010108-3 1315 PC A02/MF A01

CONTRIB-378
Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329 PC A02/MF A01

CONTRIB-410
Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329 PC A02/MF A01

CONTRIB-418
Reprint: Recent Observations of a Large Eddy in the Gulf of Alaska,
PB81-120719 1342
(Order as PB81-120677, PC A03/MF A01)

CONTRIB-1143
Reprint: Freshwater and Atlantic Water in the Kara Sea.
AD-A091 965/4 1348 PC A02/MF A01

COO-2003-36
Phytoplankton and Physical-Chemical Conditions in Selected Rivers and the Coastal Zone of Lake Michigan, 1972.
COO-2003-36 1322 PC A08/MF A01

COO-2185-13
Transport and Transfer Rates in the Waters of the Continental Shelf. Annual Report.
COO-2185-13 1383 PC A11/MF A01

COO-2218-182
Design Considerations for a Steady State Fusion Reactor's Thermal Energy Dump (TED) With Emphasis on SAFFIRE.
COO-2218-182 1415 PC A07/MF A01

COO-2383-0070
One-Leg Formulas for Stiff Differential Equations.
COO-2383-0070 1357 PC A04/MF A01

COO-3056-56
DOE/JPL Advanced Thermionic Technology Program. Progress Report No. 42.
COO-3056-56 1364 PC A05/MF A01

COO-3072-116
Open and Hidden Charm Muoproduction.
LBL-11561 1446 PC A02/MF A01

COO-3130TA-352
Progress Report for a Research Program in Theoretical High-Energy Physics.
COO-3130TA-352 1443 PC A02/MF A01

COO-3235-88
Nuclear Excitations and Reaction Mechanisms. Progress Report, 1 November 1979-30 September 1980.
DOE/ER/03235-1 1444 PC A03/MF A01

COO-3539-13
Technique for Adaptive Data Analysis.
COO-3539-13 1422 PC A02/MF A01

COO-4057-12
Gas Reactor International Cooperative Program. HTR-Synfuel Application Assessment.
COO-4057-12 1427 PC A17/MF A01

COO-4159-6
Genetic and Developmental Study of a Complex Locus in the House Mouse. Progress Report, 1979-1980.
COO-4159-6 1316 PC A02/MF A01

COO-4596-T1
Radian Remote Sampling System. Digital Processor System.
COO-4596-T1 1357 PC A04/MF A01

CRC-TN-702
An Investigation of HF Direction-Finding Accuracy on the Churchill-Ottawa Auroral Zone Path.
AD-A092 311/0 1410 PC A03/MF A01

CRC-TN-703
An Investigation of HF Direction-Finding Accuracy on the Frobisher Bay-Ottawa Auroral Zone Path.
AD-A092 312/8 1410 PC A03/MF A01

CRINC/RSL-TR-393-2
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412 PC A07/MF A01

CRN-CPR-79-7
0.5 to 6 MeV Ar Ion Induced X-Ray Emission in View to Analytical Application.
CRN-CPR-79-7 1336 PC A07/MF A01

CRN-CPR-79-16
Trace Analysis in Cadmium Telluride by Heavy Ion Induced X-Ray Emission and by SIMS.
CRN-CPR-79-16 1336 PC A02/MF A01

CRN-PN-78-17
Study of Heavy Ion Elastic Scattering and of Friction Phenomenon in Transfer Reactions Induced by exp 28 Si on exp 130 Te.
CRN-PN-78-17 1443 PC A05/MF A01

CRN-PN-78-26
Quasiconfigurations: An Approach to Effective Forces.
CRN-PN-78-26 1443 PC A02/MF A01

CRREL-80-20
Investigations of Sea Ice Anisotropy, Electromagnetic Properties, Strength, and Under-Ice Current Orientation,
AD-A092 089/2 1349 PC A03/MF A01

CRREL-80-21
Mechanics of Cutting and Boring. Part 5. Dynamics and Energetics of Identation Tools,
AD-A092 365/6 1391 PC A05/MF A01

CRREL-80-22
The Neumann Solution Applied to Soil Systems,
AD-A092 244/3 1350 PC A02/MF A01

CRT-2050-2
Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
AD-B006 844/5 1350 PC A08/MF A01

CRWR-171
Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387 PC A18/MF A01

CSA-76-8085-6
Adaptive Antenna Control (AAC) Program.
AD-A092 030/6 1407 PC A15/MF A01

CSC-R-3301-1
K-Band Terminal Simulator. Volume I. Brief Description and Operating Procedure.
AD-918 631/3 1409 PC A04/MF A01

CSGCP-72
California's Salmon Resource - Its Biology, Use and Management.
PB81-134041 1340 PC A03/MF A01

CSIR/SR/HOUT-175
Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367 PC A02/MF A01

CSIR/SR/HOUT-179
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374 PC A03/MF A01

CSM-80-05
The Design, Development, Demonstration and Transfer of Advanced Command and Control (C2) Computer-Based Systems.
AD-A092 293/0 1356 PC A05/MF A01

CTR-3-8-75-177-15
Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384 PC A13/MF A01

CUED/A-AERO/TR-6
Flow Restrictions in Railway Tunnels,
PB81-130395 1389 PC A05/MF A01

D6-24860-PT-2
Prediction of Unsteady Aerodynamic Loadings of Non-Planar Wings and Wing-Tail Configurations in Supersonic Flow. Part II. Computer Program Description.
AD-894 188/2 1438 PC A18/MF A01

D32:1980
Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394 PC A03/MF A01

D33:1980
Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395 PC A05/MF A01

D35:1980
Flat Plate Thermal Solar Collectors: A Physical Background,
PB81-135741 1363 PC A06/MF A01

D180-24910-3-VOL-1
PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438 PC A25/MF A01

D180-26111-1
Navy Manager's Guide for the Design Sections of MIL-H-46855.
AD-A092 009/0 1302 PC A04/MF A01

D210-10464-1
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume I. State-of-the-Art Review of V/STOL Rotor Technology.
AD-908 244/7 1289 PC A07/MF A01

D210-10464-2
V/STOL Dynamics and Aeroelastic Rotor - Airframe Technology. Volume II. Description and Correlation of New Methodologies.
AD-904 089/0 1289 PC A14/MF A01

D210-10464-3
V/STOL Dynamics and Aeroelastic Rotor-Airframe Technology. Volume III. User's Manuals - Computer Programs for Aeroelastic Stability Analysis and Aeroelastic Prop/Rotor Loads Analysis.
AD-904 665/7 1438 PC A12/MF A01

D460-101
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344 PC A06/MF A01

DCIEM-PUB-75X17
Reprint: Further Remarks on the Mechanism Producing the Symptoms of Meniere's Disease.
AD-A092 046/2 1317 Not available NTIS

DCIEM-RP-80-R5U-52
Reprint: Effects of Moderate Blood Alcohol Concentrations on Closed-Course Driving Performance.
AD-A092 048/8 1308 Not available NTIS

DCIEM-80-C-31
Air Saturation Dive 4 - 8 February 1980, CEDD Test Number 1-80.
AD-A092 368/0 1328 PC A05/MF A01

DCIEM-80-R-42
Evaluation of the Scott Aviox Emergency Oxygen System during a Rapid Decompression to 25,000 Feet,
AD-A092 204/7 1323 PC A02/MF A01

DELET-TR-79-0257-1
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351 PC A18/MF A01

DESY-SR-79/27
3P - 3D Intershell Interaction in Cr.
DESY-SR-79/27 1336 PC A02/MF A01

DESY-79/72
Characterization of the Higgs Phase in Lattice Gauge Theories.
DESY-79/72 1443 PC A03/MF A01

DESY-79/82
Area Law as a Consequence of the Loop Wave Equation.
DESY-79/82 1448 PC A02/MF A01

DHEW/PUB/ADM-80-1014
GC/MS Assays for Abused Drugs in Body Fluids.
PB81-133746 1326 PC A10/MF A01

DHHS/PUB/HCFA-80/03057
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
PB81-124687 1320 PC A14/MF A01

DHHS/PUB/HRA-80-45
Schools of Public Health Trends in Graduate Education,
HRP-0902582/6 1306 PC A04/MF A01

DLMA-20-06-78-07
CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
PB81-125619 1303 PC A06/MF A01

DLMA-20-06-78-07-1
CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
PB81-126039 1300 PC A06/MF A01

DLMA-20-06-78-07-2
CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
PB81-126047 1300 PC A08/MF A01

DNA-3537F
Numerical Analysis of DNA Earth Penetrator Experiment at DRES.
AD-B006 844/5 1350 PC A08/MF A01

DNA-4825F
FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
AD-A092 143/7 1421 PC A04/MF A01

DNA-5093F
Concept for Theater Integrated Nuclear/Nonnuclear Operations.
AD-A092 154/4 1403 PC A05/MF A01

DNA-5155F
Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
AD-A091 978/7 1435 PC A04/MF A01

DNA-5253F
Ground Shock on Alluvial Geologies. Study of the Effect of Cementation Breakdown and Pore Air Phenomena.
AD-A092 274/0 1342 PC A03/MF A01

DNA-5268F
Nuclear Blast Response of Airbreathing Propulsion Systems. Laboratory Measurements with an Operational J-85-5 Turbojet Engine.

AD-A092 229/4 1454 PC **A04**/MF **A01**

DNA-5293F
Late Time Containment.
AD-A092 214/6 1421 PC **A05**/MF **A01**

DNA-5324T
Backscatter Measurements of 11-cm Equatorial Spread-F Irregularities.
AD-A091 980/3 1293 PC **A03**/MF **A01**

DOE/BC/10007-8
Low Interfacial Tension and Miscibility Studies for Surfactant Tertiary Oil Recovery Processes. Annual Report, December 1, 1978-November 30, 1979.
DOE/BC/10007-8 1344 PC **A04**/MF **A01**

DOE/BC/10083-1
Basic Studies in the Recovery of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1979-August 31, 1979.
DOE/BC/10083-1 1344 PC **A02**/MF **A01**

DOE/BC/10083-7
Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, December 1, 1979-February 29, 1980.
DOE/BC/10083-7 1344 PC **A02**/MF **A01**

DOE/BC/10083-8
Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, March 1980-May 31, 1980.
DOE/BC/10083-8 1344 PC **A03**/MF **A01**

DOE/BC/10083-9
Basic Studies in the Displacement of Residual Oil by Chemical Flooding. Quarterly Report, June 1, 1980-August 31, 1980.
DOE/BC/10083-9 1344 PC **A02**/MF **A01**

DOE/BETC-80/3
Contracts for Field Projects and Supporting Research on Enhanced Oil Recovery and Improved Drilling Technology.
DOE/BETC-80/3 1344 PC **A08**/MF **A01**

DOE/BETC-2880-1
Development and Field Testing of a Process for Recovering Heavy Crude Oil in the Carlyle Pool-Allen County, Kansas Using the Vapor Therm Generator. Final Report.
DOE/BETC-2880-1 1344 PC **A03**/MF **A01**

DOE/CS-0099-D
Air Infiltration in Buildings: International Energy Agency (IEA). Draft Program Plan.
DOE/CS-0099-D 1379 PC **A08**/MF **A01**

DOE/CS/20160-01(V.5)
Site Insolation and Wind Power Characteristics: Technical Report Western Region (North Section).
DOE/CS/20160-01(V.5) 1362 PC **A10**/MF **A01**

DOE/CS/30122-4
Performance Evaluation of a State-of-the-ART Solar Air-Heating System with Auxiliary Heat Pump. Final Report, 1 October 1978-30 September 1979.
DOE/CS/30122-4 1379 PC **A10**/MF **A01**

DOE/CS/30254-1
Continuing Development of the DEROB System. Quarterly Report, July 1, 1980-September 30, 1980.
DOE/CS/30254-1 1357 PC **A02**/MF **A01**

DOE/DP/40096-1
Investigation on the Damage Threshold of Films Coated on Various Silicate, Fluorophosphate and Phosphate Laser Glasses. Final Report, January 1, 1979-August 29, 1980.
DOE/DP/40096-1 1440 PC **A03**/MF **A01**

DOE/EDP-0063
Environmental Development Plan. LWR Commercial Waste Management.
DOE/EDP-0063 1423 PC **A06**/MF **A01**

DOE/EIA-0032
Monthly Petroleum Product Price Report.
DOE/EIA-0032 1453 PC **A02**/MF **A01**

DOE/EIA-0111/79
Petroleum Refineries in the United States and U.S. Territories, January 1, 1979.
DOE/EIA-0111/79 1330 PC **A03**/MF **A01**

DOE/ER/01198-1323
Theory of Core Excitons.
DOE/ER/01198-1323 1450 PC **A02**/MF **A01**

DOE/ER/01388-452
New Results on the Spectroscopy and Dynamics of Fission.
DOE/ER/01388-452 1443 PC **A02**/MF **A01**

DOE/ER/01388-454
Polarized Proton Radiative Capture Studies of Giant Resonances.
DOE/ER/01388-454 1443 PC **A02**/MF **A01**

DOE/ER/01388-457
Production of Optically Thin Free-Standing Oil Films from the Edge of a Rotating Disc.
DOE/ER/01388-457 1441 PC **A02**/MF **A01**

DOE/ER/01763-T1
Pulse Radiolysis of Fast Reactions in Molecular Systems. Progress Report, November 1979-September 1980.
DOE/ER/01763-T1 1336 PC **A02**/MF **A01**

DOE/ER/02009-139
Technical Progress Report of the Indiana University High Energy Physics Group, December 1, 1979-November 30, 1980.
DOE/ER/02009-139 1443 PC **A02**/MF **A01**

DOE/ER/02009-140
Theoretical Particle Physics. Progress Report, December 1, 1079-November 30, 1980.
DOE/ER/02009-140 1443 PC **A02**/MF **A01**

DOE/ER/02490-1
Study of Structure of Nuclei with Neutrons and Nuclear Data Measurements for MFE. Progress Report, September 1, 1979-August 31, 1980.
DOE/ER/02490-1 1443 PC **A05**/MF **A01**

DOE/ER/03158-73
Range Profiles of Low Energy (100 to 1500 EV) Implanted exp 3 He and exp 4 He in Tungsten. II. Analysis and Discussion. Materials Science Center Report No. 4108.
DOE/ER/03158-73 1336 PC **A03**/MF **A01**

DOE/ER/03235-1
Nuclear Excitations and Reaction Mechanisms. Progress Report, 1 November 1979-30 September 1980.
DOE/ER/03235-1 1444 PC **A03**/MF **A01**

DOE/ER/03992-402
New Experimental Evidence for a New Interpretation of Flavor SU(3).
DOE/ER/03992-402 1444 PC **A02**/MF **A01**

DOE/ER/03992-412
Sequential Internal Supersymmetry.
DOE/ER/03992-412 1444 PC **A02**/MF **A01**

DOE/ER/03992-413
Geometric Ghosts and Unitarity.
DOE/ER/03992-413 1444 PC **A02**/MF **A01**

DOE/ER/03992-414
Color in Internal Supersymmetry Unification.
DOE/ER/03992-414 1444 PC **A02**/MF **A01**

DOE/ER/03992-417
Soft-Group-Manifold Structure of Supergravity, and the Proof of Unitarity.
DOE/ER/03992-417 1448 PC **A02**/MF **A01**

DOE/ER/03992-422
Unification Through a Supergroup.
DOE/ER/03992-422 1444 PC **A02**/MF **A01**

DOE/ER/04445-T1
Electrochemistry of Acetylides, Nitrides and Carbon Cathodes in Molten Halides. Progress Report.
DOE/ER/04445-T1 1336 PC **A02**/MF **A01**

DOE/ER/05002-13
Mechanism for Diffusion Induced Grain Boundary Migration.
DOE/ER/05002-13 1370 PC **A03**/MF **A01**

DOE/ER/05002-14
Group Representation of Bicrystal Invariant Translations with an Application to the Topology of Secondary Grain Boundary Dislocations.
DOE/ER/05002-14 1370 PC **A02**/MF **A01**

DOE/ER/05031-2
Isotope Effects in the Solution of Gases in Liquids. Progress Report, November 1, 1979-October 31, 1980.
DOE/ER/05031-2 1336 PC **A02**/MF **A01**

DOE/ER/10003-T2
Environmental Assessment for the Satellite Power System: Concept Development and Evaluation Program - Effects of Ionospheric Heating on Telecommunications.
DOE/ER/10003-T2 1383 PC **A05**/MF **A01**

DOE/ER/10035-01
Environmental Impacts of the Satellite Power System (SPS) On the Middle Atmosphere.
DOE/ER/10035-01 1383 PC **A03**/MF **A01**

DOE/ER/10087-T2
Investigation of Non-Magnetic Alloys for the Suppression of Tritium Permeation.
DOE/ER/10087-T2 1415 PC **A04**/MF **A01**

DOE/ER/14529-1
Performance Characteristics of Large Aperture, Ten-Cell, Atmospheric Pressure Isobutane Cherenkov Counters.
DOE/ER/14529-1 1422 PC **A02**/MF **A01**

DOE/ER/53092-T1
One-Dimensional Model Calculations of EBT-P Performance.
DOE/ER/53092-T1 1415 PC **A03**/MF **A01**

DOE/ER/53092-T2
Wave Heating Models for Ion-Cyclotron Heating in EBT-S.
DOE/ER/53092-T2 1415 PC **A03**/MF **A01**

DOE/ER/53092-T3
Microwave Heating of the ELMO Bumpy Torus Relativistic Electron Ring. Status Report, November 1, 1979-September 30, 1980.
DOE/ER/53092-T3 1415 PC **A04**/MF **A01**

DOE/ER/71001-8
Total Pion Cross Section Measurements. Annual Progress Report, January 1, 1979-December 31, 1979.
DOE/ER/71001-8 1444 PC **A02**/MF **A01**

DOE/ET/10104-T3
Solvent Refined Coal (SRC) Process: Trace Elements. Research and Development Report No. 53, Interim Report No. 30. Volume III. Pilot Plant Development Work. Part 6. The Fate of Trace Elements in the SRC Process.
DOE/ET/10104-T3 1336 PC **A09**/MF **A01**

DOE/ET/10104-T4(V.1)
Solvent Refined Coal (SRC) Process.
DOE/ET/10104-T4(V.1) 1330 PC **A12**/MF **A01**

DOE/ET/10159-T1
Peat Resources of North Carolina. Quarterly Progress Report.
DOE/ET/10159-T1 1342 PC **A02**/MF **A01**

DOE/ET/10159-T3
First Technical Contractors' Conference on Peat. Final Report.
DOE/ET/10159-T3 1342 PC **A02**/MF **A01**

DOE/ET/10182-T1
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T1 1345 PC **A04**/MF **A01**

DOE/ET/10182-T2
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T2 1345 PC **A02**/MF **A01**

DOE/ET/10182-T3
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T3 1345 PC **A02**/MF **A01**

DOE/ET/10182-T4
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T4 1345 PC **A02**/MF **A01**

DOE/ET/10182-T5
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T5 1345 PC **A03**/MF **A01**

DOE/ET/10182-T6
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T6 1345 PC **A03**/MF **A01**

DOE/ET/10182-T7
Feasibility Studies of in-Situ Coal Gasification in the Warrior Coal Field. Quarterly Report.
DOE/ET/10182-T7 1345 PC **A04**/MF **A01**

DOE/ET/10379-T3
Industrial Application Fluidized Bed Combustion: Indirect Fired Process Heaters. Final Program Report.
DOE/ET/10379-T3 1453 PC **A12**/MF **A01**

DOE/ET/10460-14
Microstructural Effects in Abrasive Wear. Quarterly Progress Report, 1 June 1980-1 September 1980.
DOE/ET/10460-14 1370 PC **A03**/MF **A01**

DOE/ET/11268-3
General Application of the Critical Path Method to Resource Characterization and Planning for Underground Coal Mining. Final Technical Report.
DOE/ET/11268-3 1345 PC **A13**/MF **A01**

DOE/ET/13046-T72
Industrial Fuel Gas Demonstration Plant Program. Procurement Schedule for Long-Lead Items (Deliverable No. 48).
DOE/ET/13046-T72 1330 PC **A07**/MF **A01**

DOE/ET/13395-1/2
Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, April-June 1979 and July-September 1979.
DOE/ET/13395-1/2 1453 PC **A05**/MF **A01**

DOE/ET/13395-3/4
Enthalpy Measurement of Coal-Derived Liquids. Combined Quarterly Technical Progress Reports, October-December 1979 and January-March 1980.
DOE/ET/13395-3/4 1453 PC **A06**/MF **A01**

DOE/ET/13395-5
Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, April-June 1980.
DOE/ET/13395-5 1453 PC **A05**/MF **A01**

DOE/ET/13395-6
Enthalpy Measurement of Coal-Derived Liquids. Quarterly Technical Progress Report, July-September 1980.
DOE/ET/13395-6 1453 PC **A04**/MF **A01**

DOE/ET/15383-3
Catalyst and Process Development for the H sub 2 Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1978-December 31, 1978.
DOE/ET/15383-3 1364 PC **A02**/MF **A01**

DOE/ET/15383-15
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, October 1, 1979-December 31, 1979.
DOE/ET/15383-15 1364 PC **A03**/MF **A01**

DOE/ET/15383-18
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Progress Report, January 1, 1980-March 31, 1980.
DOE/ET/15383-18 1364 PC **A03**/MF **A01**

DOE/ET/15383-22
Catalyst and Process Development for Hydrogen Preparation from Future Fuel Cell Feedstocks. Quarterly Report, April 1-June 30, 1980.

DOE/ET/15383-22 1364 PC **A03**/MF **A01**

DOE/ET/15602-T1

MHD Air Heater Development Technology. Progress Report, November 26, 1979-March 31, 1980.
DOE/ET/15602-T1 1364 PC **A05**/MF **A01**

DOE/ET/15613-T1

Study of Seed Reporcessing Systems for Open Cycle Coal Fired MHD Power Plants.
DOE/ET/15613-T1 1364 PC **A08**/MF **A01**

DOE/ET/20050-T1

Liquid Fuels Production from Biomass. Final Report, for Period Ending June 30, 1980.
DOE/ET/20050-T1 1453 PC **A08**/MF **A01**

DOE/ET/20108-T1

SOLCOST Support and Maintenance. Quarterly Technical Status Report.
DOE/ET/20108-T1 1357 PC **A02**/MF **A01**

DOE/ET/20279-105

Photovoltaic Power System at Natural Bridges National Monument.
DOE/ET/20279-105 1365 PC **A02**/MF **A01**

DOE/ET/20280-3

Developing a Site Selection Methodology for Wind Energy Conversion Systems. Final Report, 15 June 1977-15 September 1978.
DOE/ET/20280-3 1365 PC **A14**/MF **A01**

DOE/ET/20560-1

Statistics of Wind Fluctuations over Complex Terrain.
DOE/ET/20560-1 1362 PC **A08**/MF **A01**

DOE/ET/23009-T10

Thin Film Cadmium Telluride Solar Cells. Final Technical Report for Period July 1, 1979-August 31, 1980.
DOE/ET/23009-T10 1365 PC **A04**/MF **A01**

DOE/ET/23009-T11

Thin Film Cadmium Telluride Solar Cells. Final Technical Report, July 1, 1979-August 31, 1980.
DOE/ET/23009-T11 1365 PC **A04**/MF **A01**

DOE/ET/23108-5

Photovoltaic Mechanisms in Polycrystalline Thin-Film Silicon Solar Cells. Quarterly Report No. 4, May 1-July 31, 1980.
DOE/ET/23108-5 1365 PC **A02**/MF **A01**

DOE/ET/26106-T1

Synthesis of Research and Development in Mechanical Energy Storage Technologies. Progress Report, September 1, 1979-May 31, 1980.
DOE/ET/26106-T1 1366 PC **A02**/MF **A01**

DOE/ET/27026-T4

Geothermal Materials Survey : Arkansas Power and Light Development and Demonstration Project. 100KW Power System Using Direct Contact Heat Exchangers, El Dorado, Arkansas.
DOE/ET/27026-T4 1330 PC **A03**/MF **A01**

DOE/ET/28460-5

Investigation and Evaluation of Geopressured-Geothermal Wells.
DOE/ET/28460-5 1345 PC **A03**/MF **A01**

DOE/ET/33001-T1

Kilowatt Isotope Power System: Component Test Procedure for the Ground Demonstration System Radiator Bypass Valve.
DOE/ET/33001-T1 1430 PC **A02**/MF **A01**

DOE/ET/33001-T2

Kilowatt Isotope Power System: Component Report for the Ground Demonstration System Accumulator.
DOE/ET/33001-T2 1431 PC **A03**/MF **A01**

DOE/ET/33001-T3

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Alternator Stator.
DOE/ET/33001-T3 1431 PC **A08**/MF **A01**

DOE/ET/33001-T4

Kilowatt Isotope Power System: Test Procedure for the EHSA Multifoil Insulation. 77-KIPS-109.
DOE/ET/33001-T4 1431 PC **A02**/MF **A01**

DOE/ET/33001-T9

Kilowatt Isotope Power System. Phase II Plan. Volume III. Addendum Evaluation Criteria.
DOE/ET/33001-T9 1431 PC **A07**/MF **A01**

DOE/ET/33001-T10

Kilowatt Isotope Power System: Component Test Report for the Electric Heat Source Assembly. 77-KIPS-108.
DOE/ET/33001-T10 1430 PC **A04**/MF **A01**

DOE/ET/33001-T11

Kilowatt Isotope Power System: Test Procedure for the Ground Demonstration System. 77-KIPS-63.
DOE/ET/33001-T11 1430 PC **A05**/MF **A01**

DOE/ET/33001-T13

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Pump. 77-KIPS-99.
DOE/ET/33001-T13 1430 PC **A03**/MF **A01**

DOE/ET/33001-T14

Kilowatt Isotope Power System: Test Report for the Radiator Long and Short Panels. 77-KIPS-112.
DOE/ET/33001-T14 1431 PC **A05**/MF **A01**

DOE/ET/33001-T26

Dynamic Isotope Power System: Technology Verification Phase. Component Test Specification for the Ground Demonstration System Alternator Stator. 79-DIPS-41.
DOE/ET/33001-T26 1431 PC **A07**/MF **A01**

DOE/ET/33001-T29

Component Test Procedure for the Ground Demonstration System Jet Condenser Focusing.
DOE/ET/33001-T29 1431 PC **A02**/MF **A01**

DOE/ET/33001-T30

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Accumulator. 77-KIPS-100.
DOE/ET/33001-T30 1431 PC **A03**/MF **A01**

DOE/ET/33001-T31

Kilowatt Isotope Power System: Test Procedure for the Radiator. 78-KIPS-4.
DOE/ET/33001-T31 1431 PC **A02**/MF **A01**

DOE/ET/33001-T32

Kilowatt Isotope Power System: Test Procedure for the Radiator Long and Short Panels. 77-KIPS-111.
DOE/ET/33001-T32 1431 PC **A02**/MF **A01**

DOE/ET/33001-T33

Kilowatt Isotope Power System: Component Test Report for the Ground Demonstration System Jet Condenser Orifice Performance. 77-KIPS-103.
DOE/ET/33001-T33 1431 PC **A11**/MF **A01**

DOE/ET/33004-T1

Selenide Isotope Power System Design Review Presentation, November 10-11, 1977.
DOE/ET/33004-T1 1431 PC **A02**/MF **A01**

DOE/ET/53004-2

Heavy Ion Beam Probing.
DOE/ET/53004-2 1447 PC **A04**/MF **A01**

DOE/ET/53051-8

Abstracts of Papers Presented at the Twenty-Second Annual Meeting of the Division of Plasma Physics of the American Physical Society.
DOE/ET/53051-8 1416 PC **A02**/MF **A01**

DOE/ET/53051-9

High beta Studies in the Wisconsin Toroidal Octupole.
DOE/ET/53051-9 1447 PC **A02**/MF **A01**

DOE/ET/53051-10

Lower Hybrid Heating Associated with Mode Conversion on the Wisconsin Toroidal Octupole.
DOE/ET/53051-10 1447 PC **A03**/MF **A01**

DOE/ET/53051-113

Stability Analysis of Cylindrical Vlasov Equilibria.
DOE/ET/53051-113 1447 PC **A10**/MF **A01**

DOE/ET/53073-T1

Ballooning Mode Second Stability Region for Sequences of Tokamak Equilibria.
DOE/ET/53073-T1 1416 PC **A03**/MF **A01**

DOE/ET/53081-1

Experimental Program Based on a High Beta Q Machine. Final Report, 1 May 1978-30 September 1980.
DOE/ET/53081-1 1448 PC **A03**/MF **A01**

DOE/ET/53087-2

Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
DOE/ET/53087-2 1448 PC **A05**/MF **A01**

DOE/EV-0103

Technology Assessment of Wind Energy Conversion Systems.
DOE/EV-0103 1365 PC **A03**/MF **A01**

DOE/EV/01300-45

Organization of the R Chromosome Region in Maize. Triennial Report.
DOE/EV/01300-45 1316 PC **A02**/MF **A01**

DOE/EV/01515-84

Exchange of Lyotropic Series Cations by Micaceous Vermiculite and Its Weathering Products Determined by Electron Microscopy and Radiochemical Analysis. Final Technical Report, June 1, 1965-October 31, 1978.
DOE/EV/01515-84 1426 PC **A03**/MF **A01**

DOE/EV/10100-02

Study of the Mechanism of Carcinogenesis by Carcinogens Which Are Negative in the Ames Test. Progress Report.
DOE/EV/10100-02 1328 PC **A02**/MF **A01**

DOE/EV/10256-1

Revegetation of Alaskan Coal Mine Spoils. Progress Report.
DOE/EV/10256-1 1345 PC **A02**/MF **A01**

DOE/EV/10305-1

Radioecological Investigations of Uranium Mill Tailings Systems. Progress Report, September 1, 1979-September 30, 1980.
DOE/EV/10305-1 1426 PC **A02**/MF **A01**

DOE/EV/10360-1

Correlation of Chromosome Patterns in Human Leukemic Cells with Exposure to Chemicals and/or Radiation. Progress Report, January 1, 1980-Dec 31, 1980.
DOE/EV/10360-1 1326 PC **A02**/MF **A01**

DOE/EV/70031-5

Analysis of Baseline Data from Federally Leased Oil Shale Tracts in Colorado and Utah.
DOE/EV/70031-5 1383 PC **A03**/MF **A01**

DOE/ID/12079-8

Geology of the Colado Geothermal Area, Pershing County, Nevada.
DOE/ID/12079-8 1343 PC **A05**/MF **A01**

DOE/ID/12079-15

Bipole-Dipole Survey at Roosevelt Hot Springs, Thermal Area, Beaver County, Utah.
DOE/ID/12079-15 1342 PC **A04**/MF **A01**

DOE/JPL/954654-80/12

Silicon Web Process Development.
DOE/JPL/954654-80/12 1331 PC **A03**/MF **A01**

DOE/JPL/955382-79/6

Low-Cost Solar Array Project. Task I. Silicon Material. Investigation of the Hydrogenation of SiCl sub 4.
DOE/JPL/955382-79/6 1365 PC **A02**/MF **A01**

DOE/JPL/955696-80/2

Laser Annealing of Ion Implanted CZ Silicon for Solar Cell Junction Formation. Quarterly Report No. 2.
DOE/JPL/955696-80/2 1365 PC **A02**/MF **A01**

DOE/LC/10020-T4

Sorption of H sub 2 S on Spent Shale in Packed Beds.
DOE/LC/10020-T4 1454 PC **A09**/MF **A01**

DOE/LETC/TPR-80-1761

Tar Sand Extraction by Steam Stimulation and Steam Drive: Measurement of Physical Properties.
DOE/LETC/TPR-80-1761 1345 PC **A05**/MF **A01**

DOE/MC/10641-T1

Evaluation of Data Gathered from Unminable Coal Seams. Final Report.
DOE/MC/10641-T1 1345 PC **A05**/MF **A01**

DOE/MC/11284-T2

Effects of Effluents of Coal Combustion and Gasification Upon Lung Structure and Function. Annual Report.
DOE/MC/11284-T2 1328 PC **A02**/MF **A01**

DOE/METC/SP-80/23

Western Limits of Detachment and Related Structures in the Appalachian Foreland.
DOE/METC/SP-80/23 1343 PC **A09**/MF **A01**

DOE/NASA/CR-161550

Solar Heating System at Security State Bank, Starkville, Mississippi. Final Report.
DOE/NASA/CR-161550 1379 PC **A05**/MF **A01**

DOE/NASA/0134-1

MOD-2 Wind Turbine Farm Stability Study.
DOE/NASA/0134-1 1365 PC **A08**/MF **A01**

DOE/NASA/9235-75/3

100-KW Hingeless Metal Wind Turbine Blade Design, Analysis and Fabrication.
DOE/NASA/9235-75/3 1362 PC **A02**/MF **A01**

DOE/PC/04717-5

Catalytic Conversion of Oxygenated Compounds to Low Molecular Weight Olefins. Progress Report for the Period March 1, 1980 to August 31, 1980.
DOE/PC/04717-5 1331 PC **A02**/MF **A01**

DOE/RA/20014-T1

Marketing of Coal Mining Equipment. Evaluation of Present Techniques: Suggestions to Aid Commercialization. Final Report.
DOE/RA/20014-T1 1345 PC **A09**/MF **A01**

DOE/TIC-4579(REV.11)

Energy Information Data Base: Serial Titles.
DOE/TIC-4579(REV.11) 1362 PC **A99**/MF **A01**

DOE/TIC-4585(REV.2)

Energy Information Data Base: Corporate Author Entries.
DOE/TIC-4585(REV.2) 1362 PC **A99**/MF **A01**

DOE/TIC-11212

Annual Report, 1979.
DOE/TIC-11212 1362 PC **A03**/MF **A01**

DOE/TIC-11273

External Dosimetry.
DOE/TIC-11273 1327 PC **A03**/MF **A01**

DOE/TIC-11281

Magnetic Fusion Experiments at Oak Ridge National Laboratory (ORNL).
DOE/TIC-11281 1416 PC **A03**/MF **A01**

DOE/TIC-11282

Engineering Test Facility (ETF) At Oak Ridge National Laboratory (ORNL).
DOE/TIC-11282 1416 PC **A03**/MF **A01**

DOE/TIC-11285

Oak Ridge National Lab., Tennessee.
DOE/TIC-11285 1337 PC **A03**/MF **A01**

DOE/TIC-11287

Application of the Shell Model to Nuclear Spectroscopy.
DOE/TIC-11287 1444 PC **A03**/MF **A01**

DOE/TIC-11293

Ceramic Heat Pipe Development. Quarterly Report, April 1, 1980-June 30, 1980.
DOE/TIC-11293 1379 PC **A02**/MF **A01**

DOE-WT-117(EX)

Operation GREENHOUSE. Scientific Director's Report. Annex 3.0. The Test of Structures.
AD-B951 735/0 1421 PC **A06**/MF **A01**

DOE-WT-308(EX)

Operation BUSTER. Transport of Radioactive Debris from Operations Buster and Jangle. Project 7.1.
AD-B951 736/8 1426 PC **A09**/MF **A01**

DOE-WT-1033 (EX)
Operation WIGWAM. Project 4.1. Weapons Placement at Operation WIGWAM.
AD-B951 738/4 1402 PC **A02**/MF **A01**

DOE-WT-1040(EX)
Operation WIGWAM. Project 4.2. Weapons Assembly.
AD-B951 739/2 1402 PC **A02**/MF **A01**

DOE-WT-1418(EX)
Operation PLUMBBOB. Project 2.9. Nuclear Radiation Received by Aircrews Firing the MB-1 Rocket.
AD-B951 740/0 1327 PC **A02**/MF **A01**

DOE-WT-1471(EX)
Operation PLUMBBOB. Project 39.1b. Neutron Dosimetry by the Threshold-Detector Technique.
AD-B951 741/8 1327 PC **A02**/MF **A01**

DOE-WT-1521(EX)
Operation PLUMBBOB. Project 41.3. Effects of Altitude on Neutron Measurements.
AD-B951 742/6 1421 PC **A02**/MF **A01**

DOT-HS-805-561
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394 PC **A20**/MF **A01**

DOT-M-80-1
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297 PC **A08**/MF **A01**

DOT-OST-LIB-11
Energy Use in Transportation. Selected References.
AD-A092 157/7 1361 PC **A05**/MF **A01**

DOT-TSC-UMTA-80-15
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389 PC **A03**/MF **A01**

DOT-TSC-UMTA-80-20
Bus Driver Training Simulator Assessment.
PB81-128977 1307 PC **A03**/MF **A01**

DOUNREAY-TRANS-826
Development of Analytical Methods Relating to Aerosol and Fission Product Release from Hot and Boiling Sodium Pools.
DOUNREAY-TRANS-826 1337 PC **A02**/MF **A01**

DP-MS-80-6
Safety Evaluation of a Conceptual Fuel Recycle Complex.
DP-MS-80-6 1429 PC **A02**/MF **A01**

DP-MS-80-50
Effects of Processing Variables on the Product Quality of Large-Scale Glass Forms Containing Simulated SRP Waste.
DP-MS-80-50 1423 PC **A02**/MF **A01**

DP-1552
Computer Code to Assess Accidental Pollutant Releases.
DP-1552 1426 PC **A02**/MF **A01**

DP-1566
Calculation of Particulate Dispersion in a Design-Basis Tornadic Storm from the Atomics International Nuclear Material Development Facility, Santa Susana, California.
DP-1566 1426 PC **A03**/MF **A01**

DPST-80-146-12
Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346 PC **E03**/MF**$3.00**

DRB-REPRINT-4255
Reprint: Frequency-Stabilized Hybrid CO Laser.
AD-A092 053/8 1439 Not available NTIS

DRB-REPRINT-4256
Reprint: Off-Axis Propagation of a Laser Beam in Low Visibility Weather Conditions.
AD-A092 051/2 1440 Not available NTIS

DREA-TM-80/G
A Study of Filled and Sparse Line Array Beamformers.
AD-A092 367/2 1407 PC **A04**/MF **A01**

DREO-TN-80-20
Neutron Dosimetry Using a Tissue-Equivalent Ionization Chamber.
AD-A092 107/2 1326 PC **A02**/MF **A01**

DRIC-BR-68394
A New Angular Displacement Transducer.
AD-C019 184/1 1396 PC **A02**/MF **A01**

DRIC-BR-71433
The Weathering of Plastics Materials in the Tropics. 4. Polysulphone.
AD-A091 887/0 1373 PC **A03**/MF **A01**

DRIC-BR-71903
Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363 PC **A04**/MF **A01**

DRIC-BR-71961
The Weathering of Plastics Materials in the Tropics. 5. Polyphenylene Oxide and Noryl.
AD-A092 105/6 1373 PC **A04**/MF **A01**

DRIC-BR-72727
POSER - A Process Organisation to Simplify Error Recovery,
AD-A092 103/1 1354 PC **A02**/MF **A01**

DRIC-BR-72779
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288 PC **A03**/MF **A01**

DRIC-BR-74217
Microwave Frequency Memory,
AD-A092 104/9 1354 PC **A02**/MF **A01**

DRIC-BR-74910
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292 PC **A03**/MF **A01**

DRIC-BR-75017
Modelling of Compressed Magnetic Field Generators by Equivalent Circuit Approach,
AD-A091 933/2 1359 PC **A04**/MF **A01**

DRIC-BR-75265
Production of Nitrous Oxide in a Rocket Motor Exhaust.
AD-A091 893/8 1380 PC **A02**/MF **A01**

DRIC-BR-75866
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456 PC **A02**/MF **A01**

DRIC-BR-75868
Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938,
AD-A091 915/9 1288 PC **A02**/MF **A01**

DRSAR-CPE-77-9
Independent Production Cost Estimate: XM1 Tank Main Armament Evaluation.
AD-B026 310/3 1436 PC **A04**/MF **A01**

DRSMI/RG-80-22
Field Evaluation of the LR80 Land Navigation System.
AD-A091 885/4 1412 PC **A05**/MF **A01**

DRSMI/RH-80-3-TR
Proposed Nuclear Pumped Laser Experiments Utilizing Gamma-Rays.
AD-A091 883/9 1439 PC **A03**/MF **A01**

DRSMI/RN-80-3-MR
A Methodology for Aggregation of Multiple Criteria Rank-Ordered Priorities.
AD-A091 884/7 1296 PC **A10**/MF **A01**

DRSMI-T-CR-79-23
Target Recognition System Design: Computational Structures with Response Time Characteristics Dictated by the Operational Environment.
AD-B041 709/7 1413 PC **A03**/MF **A01**

DTNSRDC/ASED-80/14
P-3 Orion Fuel-Saving Modification Wind Tunnel Study,
AD-A091 906/8 1288 PC **A04**/MF **A01**

DTNSRDC-SPD-458-01
An Investigation of Appendage Drag,
AD-A092 353/2 1392 MF **A01**

DTNSRDC/SPD-693-02
Prediction of Thrust-Deduction and Wake Fractions for Twin-Screw Destroyers.
AD-A092 449/8 1392 PC **A06**/MF **A01**

DTNSRDC/SPD-0719-01
Dynamic Hull and Propeller Interaction Factors for FF-1052 Predicted from Quasi-Steady Model Experiments.
AD-A091 890/4 1392 PC **A02**/MF **A01**

DTNSRDC/SPD-0820-03
Documentation for an Improved Version of HULIMP, A Ship Hull Improvement Computer Program Based on the Baba Theory.
AD-A092 133/8 1392 PC **A03**/MF **A01**

DTNSRDC/SPD-0833-04
Analysis of Wake Survey Experimental Data for Model 5365 Representing the R/V ATHENA in the DTNSRDC Towing Tank.
AD-A092 246/8 1392 PC **A10**/MF **A01**

DTNSRDC/SPD-0840-01
Program PHFMOPT, Planing Hull Feasibility Model, User's Manual.
AD-B033 624/8 1393 PC **A08**/MF **A01**

DTNSRDC/SPD-0851-01
Correlation of Model Experiments with Ship Powering Data for Three Tankers Represented by Models 9006, 9007, 9008, and 9009.
AD-A091 940/7 1392 PC **A03**/MF **A01**

DTNSRDC/SPD-0965-01
Documentation for the Ship Hydrostatics Computer Program HYDRO.
AD-A092 454/8 1393 PC **A04**/MF **A01**

DTNSRDC-80/061
Response of a Point Excited Infinitely Long Cylindrical Shell Immersed in an Acoustic Medium.
AD-A091 947/2 1449 PC **A04**/MF **A01**

DTNSRDC-80/101
Frictional Characteristics of Tilt-Pad and Swing-Pad Thrust Bearings.
AD-A091 909/2 1392 PC **A03**/MF **A01**

EA-4D91
Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
AD-B004 405/7 1432 PC **A03**/MF **A01**

ED-183 153
An Instructional Module on Library Research,
ED-183 153 1298 Not available NTIS

ED-183 154
An Inventory to the Records of the 1977 South Carolina International Women's Year Conference.
ED-183 154 1298 Not available NTIS

ED-183 158
Materials from the National Arts and the Handicapped Information Service: Annotated Bibliography. Second Draft.
ED-183 158 1298 Not available NTIS

ED-183 160
National Endowment for the Humanities Bibliography of Humanistic Reading for Grade Levels 1-8.
ED-183 160 1298 Not available NTIS

ED-183 161
The OCLC Serials Sub-System: A First Evaluation,
ED-183 161 1298 Not available NTIS

ED-183 162
On-Site Library Training Program for School and Community in an Economically and Culturally Deprived County.
ED-183 162 1298 Not available NTIS

ED-183 163
Planning Library Programs,
ED-183 163 1298 Not available NTIS

ED-183 166
Reference Materials in Criminal Justice: A Selective, Annotated Bibliography,
ED-183 166 1298 Not available NTIS

ED-183 169
A Demonstration Project of Model Library Programs for Institutionalized Mentally Retarded and Multiply Handicapped Persons.
ED-183 169 1298 Not available NTIS

ED-183 170
A Guide to Dutch Manuscripts Relating to New Netherland in United States Repositories,
ED-183 170 1298 Not available NTIS

ED-183 184
The Question Episode--Building Block of Teaching with a Computer. The Illinois Series on Educational Application of Computers, No. 4e,
ED-183 184 1305 Not available NTIS

ED-183 186
Tutorial Instruction on a Computer. The Illinois Series on Educational Application of Computers, No. 6e,
ED-183 186 1305 Not available NTIS

ED-183 189
Instructional Games and the Computer-Using Teacher. The Illinois Series on Educational Application of Computers, No. 9e,
ED-183 189 1306 Not available NTIS

ED-183 192
Getting Started in School Computing: Preparing to Purchase. The Illinois Series on Educational Application of Computers, No. 14e,
ED-183 192 1306 Not available NTIS

ED-183 199
Documentation--INFO: A Small Computer Data Base Management System for School Applications. The Illinois Series on Educational Application of Computers, No. 24e,
ED-183 199 1299 Not available NTIS

ED-183 200
Documentation--A Computerized Instructional Resource Management System. The Illinois Series on Educational Application of Computers. No. 26e,
ED-183 200 1306 Not available NTIS

ED-183 201
MC Painting Manual A: User's Guide. The Illinois Series on Educational Applications of Computers, No. 33. Revised Edition,
ED-183 201 1306 Not available NTIS

ED-183 206
Higher Education Uses of Telemedia in Virginia. Telecommunications Study Commission.
ED-183 206 1409 Not available NTIS

ED-183 208
Telemedia Research and Innovation. Telecommunications Study Commission.
ED-183 208 1410 Not available NTIS

EDA/ERD-80-168
Moving from Reaction to Anticipation in U.S. Import Policies.
PB81-125544 1300 PC **A03**/MF **A01**

EDA-ERD-80-169
Water Resource Priorities for the Midwest.
PB81-129801 1386 PC **A04**/MF **A01**

EDA-80-0187
Water Availability for the City of Lamar, Colorado.
PB81-130965 1386 PC **A06**/MF **A01**

EERL-80-02
Full-Scale Experimental Investigation of a Modern Earth Dam,

PB81-123788 1384 PC **A10**/MF **A01**

EES-304
Applied Research in Analytical Photogrammetry.
PB81-127300 1341 PC **A05**/MF **A01**

EGG-FM-5241
Iron-Rich Basalt-Type Waste Forms for Transuranic and Low-Level Waste Containment: Evaluation of Electromelt Castings.
EGG-FM-5241 1424 PC **A07**/MF **A01**

EGG-2056
Tables of Homogeneous Equilibrium Critical Flow Parameters for Water in SI Units.
EGG-2056 1427 PC **A13**/MF **A01**

EM-CR-75001
Identification and Evaluation of Hazards Associated with Blending of Violet Smoke Mix by Jet Airmix Process.
AD-B004 405/7 1432 PC **A03**/MF **A01**

EMK-80-2-VOL-1
Overhead Costs and Rates in the U.S. Defense Industrial Base. Volume 1.
AD-A091 963/9 1299 PC **A06**/MF **A01**

ENDF-248
Evaluation of exp 235 U Neutron Cross Section and gamma Ray Production Data for ENDF/B-V.
BNL-NCS-51184 1442 PC **A04**/MF **A01**

ENDF-303
GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
ORNL/TM-7341 1446 PC **A09**/MF **A01**

ENICO-1043
Calcination of Sodium-Bearing Waste Using Non-Radioactive Additives.
ENICO-1043 1424 PC **A04**/MF **A01**

ENICO-1044
Inventory of Calcined Waste Stored at the ICPP as of September 1979.
ENICO-1044 1424 PC **A03**/MF **A01**

ENICO-1054
Continuous Plutonium Monitor for Nuclear Facility off-Gas Streams.
ENICO-1054 1396 PC **A03**/MF **A01**

ENICO-1060
Storage and Retrievability of Existing and Future ICPP Calcines.
ENICO-1060 1424 PC **A03**/MF **A01**

ENICO-1061
Methods for Fission Product Analysis by Isotope Dilution Mass Spectrometry.
ENICO-1061 1420 PC **A03**/MF **A01**

EOARD-TR-80-15
Interdiffusion of Metals and Semiconductors.
AD-A091 961/3 1450 PC **A02**/MF **A01**

EPA-AA-CTAB/PA/80-5
Comparison of Gas Phase Hydrocarbon Emissions from Light-Duty Gasoline Vehicles and Light-Duty Vehicles Equipped with Diesel Engines.
PB81-122996 1389 PC **A03**/MF **A01**

EPA-AA-TAEB-77-01
The Effects of Emission Control System Malfunctions or Maladjustments on Exhaust Emissions.
PB81-122004 1389 PC **A02**/MF **A01**

EPA-AA-TAEB-77-03
Results of Sulfate Tests on Prototype Vehicles.
PB81-123028 1389 PC **A03**/MF **A01**

EPA-600/1-78-050
Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322 PC **A20**/MF **A01**

EPA-600/1-79-044
Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323 PC **A21**/MF **A01**

EPA-600/1-80-037
Study of Pathogenic Free-Living Amebas in Fresh-Water Lakes in Virginia.
PB81-126450 1322 PC **A07**/MF **A01**

EPA-600/2-80-195
Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383 PC **A05**/MF **A01**

EPA-600/2-80-203
Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383 PC **A04**/MF **A01**

EPA-600/2-80-204
Polynuclear Aromatic Compounds. Synthesis and Purification.
PB81-125015 1332 PC **A05**/MF **A01**

EPA-600/2-80-206
Development of a Chemical Toxicity Assay for Pulp Mill Effluents.
PB81-126369 1339 PC **A06**/MF **A01**

EPA-600/2-80-207
Treatment of Primary Effluent by Rapid Infiltration.
PB81-129124 1386 PC **A06**/MF **A01**

EPA/600/4-80-037
Williams Air Force Base Air Quality Monitoring Study.
AD-A092 165/0 1381 PC **A05**/MF **A01**

EPA-600/4-80-051
Summary of the Western Energy Overhead Monitoring Project.
PB81-129009 1385 PC **A03**/MF **A01**

EPA-600/7-80-129
HF (High Frequency) Radar Measurements of Circulation in the Eastern Strait of Juan de Fuca Near Protection Island (July, 1979).
PB81-127490 1342 PC **A07**/MF **A01**

EPA-600/7-80-151
Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
PB81-142192 1387 PC **A09**/MF **A01**

EPA-600/7-80-181
Reconnaissance Study of Leachate Quality from Raw Mined Oil Shale - Laboratory Columns.
PB81-129017 1386 PC **A04**/MF **A01**

EPA-600/8-80-031
Environmental Assessment Data Systems User Guide: Project Profile System.
PB81-125825 1299 PC **A09**/MF **A01**

EPA-600/9-80-062
Wastewater Alternatives for Small Communities.
PB81-131658 1386 PC **A17**/MF **A01**

EPA-600/J-80-007
Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329 PC **A02**/MF **A01**

EPA-600/J-80-080
Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329 PC **A02**/MF **A01**

EPA-600/J-80-084
Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316 PC **A02**/MF **A01**

EPA-600/J-80-085
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322 PC **A02**/MF **A01**

EPA-600/J-80-087
Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
PB81-126567 1324 PC **A02**/MF **A01**

EPA-600/J-80-089
Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
PB81-122723 1384 Not available NTIS

EPA-600/J-80-091
Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338 Not available NTIS

EPA-600/J-80-092
Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383 PC **A04**/MF **A01**

EPA-600/J-80-094
Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329 PC **A02**/MF **A01**

EPA-600/J-80-095
Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329 Naot available NTIS

EPA-600/J-80-105
Reprint: Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
PB81-129470 1339 PC **A02**/MF **A01**

EPA-600/J-80-148
Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317 PC **A02**/MF **A01**

EPA-600/J-80-151
Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324 PC **A02**/MF **A01**

EPA-600/J-80-194
Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).
PB81-132037 1329 PC **A02**/MF **A01**

EPA-905/2-80-006
Region V's Guidance for Developing a State Malfunction Notification and Correction Program.
PB81-125601 1384 PC **A04**/MF **A01**

EPRI-AP-1463
Operational Analysis of Open-Cycle MHD. Final Report.
EPRI-AP-1463 1366 PC **A12**/MF **A01**

EPRI-AP-1499
Ceramic Materials for Fusion Reactors. Interim Report.
EPRI-AP-1499 1367 PC **A06**/MF **A01**

EPRI-AP-1544
Field-Reversed Mirror Pilot Reactor. Annual Report.
EPRI-AP-1544 1416 PC **A16**/MF **A01**

EPRI-NP-1509
Improvements to the COBRA-TF (EPRI) Computer Code for Steam Generator Analysis. Final Report.
EPRI-NP-1509 1427 PC **A06**/MF **A01**

ERADCOM/ASL-CR-80-0100-2
Comparison of Electron Densities in the Middle Atmosphere Indicated by Rocket Borne Probing Techniques.
AD-A092 503/2 1294 PC **A03**/MF **A01**

ERIM-134400-11-F-VOL-1
Coastal Remote Sensing Investigations. Volume 1. Marine Environment.
AD-A092 025/6 1348 PC **A04**/MF **A01**

ERL.GB-J0070
Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322 PC **A02**/MF **A01**

ERL.GB-J0080
Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
PB81-126567 1324 PC **A02**/MF **A01**

ERL-GB-J830
Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329 PC **A02**/MF **A01**

ERL.GB-0093
Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317 PC **A02**/MF **A01**

ERL-0143-TR
Automatic Erasure of Released Disk Space on an IBM 370 Computer Using the MVS Operating System.
AD-A091 957/1 1353 PC **A03**/MF **A01**

ESD-TR-80-71
Information Processing Techniques Program. Volume I. Packet Speech Systems Technology.
AD-A092 113/0 1408 PC **A03**/MF **A01**

ESD-TR-80-83
Design Considerations for the Infrared Airborne Radar (IRAR) MTI Subsystem.
AD-A091 927/4 1411 PC **A05**/MF **A01**

ESD-TR-80-92
A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358 PC **A04**/MF **A01**

ESD-TR-80-178
Reprint: Image Restoration by Short Space Spectral Subtraction.
AD-A092 298/9 1358 Not available NTIS

ESL-38
Geology of the Colado Geothermal Area, Pershing County, Nevada.
DOE/ID/12079-8 1343 PC **A05**/MF **A01**

ESL-43
Bipole-Dipole Survey at Roosevelt Hot Springs, Thermal Area, Beaver County, Utah.
DOE/ID/12079-15 1342 PC **A04**/MF **A01**

ESL-711679-2
Airborne Antenna Pattern Code User's Manual.
AD-A092 316/9 1359 PC **A06**/MF **A01**

ESN-33-5
European Scientific Notes. Volume 33, Number 5.
AD-A092 024/9 1297 PC **A03**/MF **A01**

ESSA-NDSR-70-1
The Lubbock, Texas, Tornado May 11, 1970. A Report to the Administrator.
PB81-137788 1295 PC **A03**/MF **A01**

ETL-0215
Discrete Scattering Approach to Vegetation Modeling.
AD-A092 017/3 1452 PC **A04**/MF **A01**

ETL-0225
Advanced Satellite Hardware/Software System Study.
AD-A091 959/7 1354 PC **A11**/MF **A01**

ETL-0229
Video Stream Processors: A Cost-Effective Computational Architecture for Image Processing.
AD-A092 146/0 1355 PC **A04**/MF **A01**

ETL-0234
Circularly Polarized Measurements of Radar Backscatter from Terrain and Snow-Covered Terrain.
AD-A092 077/7 1412 PC **A07**/MF **A01**

ETL-0243
STARAN Image Processing.
AD-A091 928/2 1353 PC **A05**/MF **A01**

EUR-CEA-FC-1013
Equations for the Nonlinear Evolution of the Resistive Tearing Modes in Toroidal Plasmas.
EUR-CEA-FC-1013 1416 PC **A02**/MF **A01**

EUR-CEA-FC-1014
Comments on Various Derivative Methods of the Parametric Dispersion Relations.

EUR-CEA-FC-1014 1448 PC **A03**/MF **A01**

EUR-6400E
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
KFK-2860 1429 PC **A05**/MF **A01**

EUR-6401E
As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429 PC **A06**/MF **A01**

EUR-6402E
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429 PC **A04**/MF **A01**

EUR-6806-FR
Completion of a Prototype Installation for in-Line Coating by the Pyrosol Process for the Realization of Selective Glazings. Final Report.
EUR-6806-FR 1362 PC **A03**/MF **A01**

F-1535
Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope).
PB81-125171 1338 PC **A02**/MF **A01**

FAA-AM-80-9
Effects of Ozone (0.30 Parts per Million, approximately 600 micro g /cu m) on Sedentary Men Representative of Airline Passengers and Cockpit Crewmembers.
AD-A092 268/2 1328 PC **A04**/MF **A01**

FAA-ASF-80-4-VOL-1
Special Aviation Fire and Explosion Reduction (SAFER) Advisory Committee. Volume I.
AD-A092 016/5 1394 PC **A05**/MF **A01**

FAA-ASF-803
Summary of Aviation Safety Program Resumes. Cabin Safety.
AD-A091 938/1 1288 PC **A03**/MF **A01**

FAA-CT-80-20
Consolidated Car Display: A Summary Report of the Process and the Results of the Consolidation of Critical and Supplementary Terminal Area Air Traffic Control Information for Display Presentation.
AD-A092 450/6 1412 PC **A03**/MF **A01**

FAA-CT-80-36
Exhaust Emission Characteristics and Variability for Maintained General Electric CF6-50 Turbofan Engines.
AD-A092 291/4 1455 PC **A04**/MF **A01**

FAA-CT-80-41
Distance Measuring Equipment Traffic-Loading Capacity Investigation.
AD-A091 977/9 1412 PC **A04**/MF **A01**

FAA/EE-80-37
A Guidance Document on Airport Noise Control.
AD-A092 228/6 1290 PC **A08**/MF **A01**

FAA/EE-80-40
The Need for Airport Noise Monitoring Systems. Their Uses, and Value in Promoting Civil Aviation.
AD-A092 240/1 1290 PC **A03**/MF **A01**

FAA-EM-80-9
Airport Ground Access Planning Guide.
AD-A092 018/1 1290 PC **A07**/MF **A01**

FAA-NA-78-47
Advanced Fire Extinguishers for Aircraft Habitable Compartments.
AD-B044 225/1 1289 PC **A05**/MF **A01**

FAA-RD-80-73
Consolidated Car Display: A Summary Report of the Process and the Results of the Consolidation of Critical and Supplementary Terminal Area Air Traffic Control Information for Display Presentation.
AD-A092 450/6 1412 PC **A03**/MF **A01**

FAA-RD-80-98
Evaluation of a Meteorological Airborne Pulse Doppler Radar.
AD-A092 276/5 1412 PC **A03**/MF **A01**

FAA-RD-80-100
Distance Measuring Equipment Traffic-Loading Capacity Investigation.
AD-A091 977/9 1412 PC **A04**/MF **A01**

FAR-30000
Flow of Technology from the OECD to the U.S.S.R: A Feasibility Study.
AD-A092 442/3 1297 PC **A03**/MF **A01**

FE-2895-8
MHD High Performance Demonstration Experiment. Quarterly Progress Report, January 1-March 31, 1980.
FE-2895-8 1366 PC **A04**/MF **A01**

FERMILAB-CONF-80/84-EXP
Open and Hidden Charm Muoproduction.
LBL-11561 1446 PC **A02**/MF **A01**

FHWA/CA/TL-80/03
Highway Operation and Plant Damage.
PB81-133159 1387 PC **A12**/MF **A01**

FHWA/CA/TL-80/08
Erosion Control Product Testing Using Rainfall Simulation.
PB81-132995 1386 PC **A04**/MF **A01**

FHWA/CA/TL-80/16
The Effectiveness of Horizontal Drains.
PB81-124851 1384 PC **A05**/MF **A01**

FHWA/CA/TL-80/20
Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1367 PC **A06**/MF **A01**

FHWA/OH-80/005
Applied Research in Analytical Photogrammetry.
PB81-127300 1341 PC **A05**/MF **A01**

FHWA/TX-79/26-177-15
Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384 PC **A13**/MF **A01**

FLOW TECHNOLOGY-131
Field Test of Hydraulic Borehole Mining Systems in Shallow Uranium Sands.
PB81-128969 1348 PC **A10**/MF **A01**

FR-71-3428
Photo-Carto Interface.
AD-893 054/7 1340 PC **A10**/MF **A01**

FSGTR/RM-78
Biotic Communities of the Southwest.
PB81-133134 1342 PC **A03**

FSRB-FPL-8
Wood Products Used in Military Construction in the United States - 1962 and 1978.
AD-A092 022/3 1374 PC **A02**/MF **A01**

FSRB-FPL-9
Wood Products Used in Constructing Conservation and Development Projects by the Corps of Engineers in the United States - 1962 and 1978.
AD-A092 023/1 1374 PC **A02**/MF **A01**

FSRP-FPL-367
Smoldering Wave-Front Velocity in Fiberboard.
AD-A091 932/4 1388 PC **A02**/MF **A01**

FSRP-FPL-368
Effect of Cross Grain on Stress Waves in Lumber.
AD-A091 949/8 1374 PC **A02**/MF **A01**

FSRP-FPL-369
Does Gang Ripping Hold the Potential for Higher Clear Cutting Yields.
AD-A091 964/7 1374 PC **A02**/MF **A01**

FSRP-NE-315
Flowering and Seed Production in Seven Hardwood Species.
PB81-141996 1292 PC **A02**/MF **A01**

FSRP-NE-326
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292 PC **A02**/MF **A01**

FSRP-NE-328
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375 PC **A02**/MF **A01**

FSRP-NE-336
SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374 PC **A03**/MF **A01**

FSRP-NE-347
Carbohydrate Levels in Current-year Shoots of Sugar Maple.
PB81-134199 1291 PC **A02**/MF **A01**

FSRP-NE-348
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291 PC **A02**/MF **A01**

FSRP-NE-400
Skyline Harvesting in Appalachia.
PB81-134173 1291 PC **A02**/MF **A01**

FSRP-RM-227
Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291 PC **A02**/MF **A01**

FTD-ID(RS)T-0936-80-VOL-16-1
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 1--Translation.
AD-A092 090/0 1318 PC **A22**/MF **A01**

FTD-ID(RS)T-0936-80-VOL-16-2
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 2--Translation.
AD-A092 091/8 1318 PC **A22**/MF **A01**

FTD-ID(RS)T-0936-80-VOL-16-3
Experience of Soviet Medicine in a Great Patriotic War, 1941-1945. Volume 16, Section 3--Translation.
AD-A092 092/6 1318 PC **A22**/MF **A01**

FTD-ID(RS)T-0936-80-VOL-16-4
Experience of Soviet Medicines in a Great Patriotic War, 1941-1945. Volume 16, Section 4--Translation.
AD-A092 093/4 1318 PC **A21**/MF **A01**

FTD-ID(RS)T-1143-80
Problems of Reliability of Semiconductor Integrated Circuits in Plastic Housings--Translation.
AD-A092 095/9 1351 PC **A02**/MF **A01**

FTD-ID(RS)T-1170-80
Laser Light Fiber Communication--Translation.
AD-A092 096/7 1407 PC **A02**/MF **A01**

FTD-ID(RS)T-1190-80
A 20 Years' Survey of Laser Science and Technology in China. II--Translation.
AD-A092 097/5 1439 PC **A03**/MF **A01**

FTD-ID(RS)T-1228-80
Ways for Providing a High-Speed Analog-to-Digital Converter with Wide Dynamic Range--Translation.
AD-A092 099/1 1359 PC **A02**/MF **A01**

FTD-ID(RS)T-1233-80
New Principles in Weapons--Translation.
AD-A092 100/7 1402 PC **A02**/MF **A01**

FWD74-543
Low Loss Wideband Acoustic Delay Line.
AD-923 650/6 1352 PC **A03**/MF **A01**

G-606
Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane).
PB81-125189 1338 PC **A02**/MF **A01**

GA-A-15885
Hot Helium Flow Test Facility Summary Report.
GA-A-15885 1427 PC **A03**/MF **A01**

GA-A-15894
GCFR Steam Generator Conceptual Design.
GA-A-15894 1428 PC **A02**/MF **A01**

GA-A-15900
Gas-Cooled Fast Breeder Reactor. Quarterly Progress Report, February 1-April 30, 1980.
GA-A-15900 1428 PC **A11**/MF **A01**

GA-A-15929
Strength and Fracture Characteristics of HTGR Thermal Barrier Ceramics.
GA-A-15929 1367 PC **A07**/MF **A01**

GA-A-15974
Team One (GA/MCA) Effort of the DOE 12 Tesla Coil Development Program. 12 Tesla ETF Toroidal Field Coil Helium Bath Cooled NbTi Alloy Concept.
GA-A-15974 1416 PC **A05**/MF **A01**

GA-A-16013
Stability Analysis of NbTi-Ta-Based High Field Conductor Cooled by Pool Boiling Below 4 K.
GA-A-16013 1416 PC **A02**/MF **A01**

GA-A-16052
High Temperature Heat Exchange: Nuclear Process Heat Applications.
GA-A-16052 1428 PC **A02**/MF **A01**

GA-A-16071
Vacuum Pumping Concepts for ETF.
GA-A-16071 1393 PC **A02**/MF **A01**

GA-A-16072
Preliminary Radiation Criteria and Nuclear Analysis for ETF.
GA-A-16072 1416 PC **A02**/MF **A01**

GA-A-16089
First Wall Engineering and Technology in Fusion.
GA-A-16089 1416 PC **A02**/MF **A01**

GACIAC-SR-80-02
Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396 PC **A08**/MF **A01**

GAO/FGMSD-80-47
Correct Balance of Defense's Foreign Military Sales Trust Fund Unknown.
AD-A091 894/6 1296 PC **A03**/MF **A01**

GEFR-SP-222
Stress Corrosion in Liquid Metal Fast Breeder Reactor Systems, LMFBR.
GEFR-SP-222 1429 PC **A03**/MF **A01**

GEPP-TIS-534
Software for Communication Between a Hewlett Packard 9825 Process Control Computer and a Honeywell 66/60 Time Sharing Computer.
GEPP-TIS-534 1357 PC **A02**/MF **A01**

GER-16902
STARAN Image Processing.
AD-A091 928/2 1353 PC **A05**/MF **A01**

GIDEP-E069-2686
Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
AD-B014 875/9 1455 PC **A10**/MF **A01**

GIDEP-E111-1461
Application of Statistical Fracture Criteria to the Problem of Predicting Infrared Dome Thermal Shock Failures.
AD-B028 668/2 1411 PC **A04**/MF **A01**

GIDEP-E119-1143
Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403 PC **A04**/MF **A01**

GIDEP-E140-1053
Laser Safety Computer Program.
AD-B032 525/8 1439 PC **A03**/MF **A01**

GIDEP-E140-2553
Design Study for a 100-Watt Turboalternator Power Unit.

AD-B029 195/5 1364 PC **A03**/MF **A01**

GIDEP-347.60.00.00-X7-43
Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 684/2 1433 PC **A03**/MF **A01**

GIT-ICS-80/09
Software Project Forecasting.
AD-A091 923/3 1353 PC **A02**/MF **A01**

GJBX-114(80)
Evaluation of Selected Geochemical Anomalies in Colorado and the Southeastern US. Final Report.
GJBX-114(80) 1346 PC **A04**/MF **A01**

GJBX-168(80)
Aerial Radiometric and Magnetic Survey, San Angelo National Topographic Map: Texas, West Texas Project. Final Report.
GJBX-168(80) 1346 PC **E11**/MF**$4.50**

GJBX-177(80)
Principles and Characteristics of Surface Radon and Helium Techniques Used in Uranium Exploration.
GJBX-177(80) 1346 PC **A04**/MF **A01**

GJBX-178(80)
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Memphis Quadrangle, Arkansas, Missouri, and Tennessee. Final Report.
GJBX-178(80) 1346 PC **E11**/MF**$4.50**

GJBX-185(80)
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346 PC **E09**/MF**$3.00**

GJBX-198(80)
Delta 1 exp 0 X 2 exp 0 NTMS Area, Utah: Data Report (Abbreviated).
GJBX-198(80) 1346 PC **E03**/MF**$3.00**

GJBX-200(80)
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Fort Smith Quadrangle, Oklahoma, and Arkansas. Final Report.
GJBX-200(80) 1346 PC **E09**/MF**$4.10**

GJBX-202(80)
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Nashville Quadrangle, Tennessee, and Kentucky. Final Report.
GJBX-202(80) 1346 PC **E08**/MF**$4.10**

GJBX-203(80)
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Tupelo Quadrangle, Mississippi, Alabama, and Tennessee. Final Report.
GJBX-203(80) 1346 PC **E09**/MF**$4.10**

GJBX-204(80)
Aerial gamma Ray and Magnetic Survey: Mississippi and Florida Airborne Survey, Russellville Quadrangle, Arkansas.
GJBX-204(80) 1347 PC **E09**/MF**$3.00**

GJBX-212(80)
Aerial gamma Ray and Magnetic Survey, Montrose Detail Projects, Colorado. Volume I. Final Report.
GJBX-212(80) 1347 PC **A04**/MF **A01**

GJBX-212(80)(V.2)(AREA1)
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 1, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA1) 1347 PC **E14**/MF**$4.70**

GJBX-212(80)(V.2)(AREA2)
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 2, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA2) 1347 PC **E06**/MF**$3.00**

GJBX-212(80)(V.2)(AREA3)
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 3, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA3) 1347 PC **E09**/MF**$3.00**

GJBX-212(80)(V.2)(AREA4)
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 4, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA4) 1347 PC **E11**/MF**$4.25**

GJBX-212(80)(V.2)(AREA5)
Aerial gamma Ray and Magnetic Survey, Montrose Detail Area 5, Colorado. Final Report.
GJBX-212(80)(V.2)(AREA5) 1347 PC **E08**/MF**$3.00**

GLERL-CONTRIB-222
New Observations on the Daily Variations of Natural Ice Albedo.
PB81-132789 1350 PC **A03**/MF **A01**

GRC-OAD-CR-178
The SOTAS-Scout-AAH/HELLFIRE System.
AD-A092 147/8 1288 PC **A03**/MF **A01**

GRI-79/0051
Gas Saturation in Formation Waters.
PB81-130759 1343 PC **A05**/MF **A01**

GS-7301
INTERAND Target Annotation System.
AD-B001 109/8 1435 PC **A05**/MF **A01**

GUNI-10
Metoder foer Bestaemning av Halkfrekventa Vaegstraeckor (Methods for Detecting Road Sections with High Frequency of Ice Formation).
PB81-128290 1385 PC **A03**/MF **A01**

GUNI-12
Studier av Halka Pa Vaegar (Studies of Slipperiness on Roads).
PB81-128316 1385 PC **A03**/MF **A01**

HAC-FR-79-27-850
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359 PC **A06**/MF **A01**

HAC-P74-59R-VOL-1
Modular Multi-Sensor Display System Design Study. Volume I. Requirements Analysis and Design Studies.
AD-B004 191/3 1290 PC **A10**/MF **A01**

HAC-REF-E0010
Conical Phased Array Antenna Investigations.
AD-B039 121/9 1359 PC **A06**/MF **A01**

HDL-SR-80-1
NUDACC (Nuclear Damage Assessment Computer Code) Programmer's Guide.
AD-A091 939/9 1421 PC **A02**/MF **A01**

HDL-TM-80-21
Two-Stage Servovalve Development Using a First-Stage Fluidic Amplifier.
AD-A092 011/6 1393 PC **A03**/MF **A01**

HDL-TM-80-28
Upgrading the AURORA Simulator.
AD-A092 501/6 1452 PC **A03**/MF **A01**

HDL-TR-1539
Design of Fluidic Devices for Small Arms Stabilization.
AD-A092 027/2 1435 PC **A03**/MF **A01**

HDL-TR-1930
A Near-Surface Burst EMP Driver Package for Neutron-Induced Sources.
AD-A091 908/4 1421 PC **A04**/MF **A01**

HDL-TR-1936
Unstable-Resonator and Output-Coupling Design Study for Diffraction Radiation Generator Near-Millimeter Sources.
AD-A092 502/4 1439 PC **A03**/MF **A01**

HEDL-SA-1933
Experience with Simplified Inelastic Analysis of Piping Designed for Elevated Temperature Service.
HEDL-SA-1933 1428 PC **A02**/MF **A01**

HEDL-SA-1955
Seismic Transient Analysis of a Containment Vessel with Penetrations.
HEDL-SA-1955 1428 PC **A03**/MF **A01**

HEDL-SA-1992-FP
Insulated Pipe Clamp Design.
HEDL-SA-1992-FP 1428 PC **A02**/MF **A01**

HEDL-SA-1994-FP
Seismic Analysis of Piping with Nonlinear Supports.
HEDL-SA-1994-FP 1428 PC **A02**/MF **A01**

HEDL-SA-2006-FP
Failure Analysis of Carbide Fuels under Transient Overpower (TOP) Conditions.
HEDL-SA-2006-FP 1429 PC **A03**/MF **A01**

HEDL-SA-2174
State Variable Description of 316 SS Post-Irradiation Mechanical Properties.
HEDL-SA-2174 1429 PC **A03**/MF **A01**

HEDL-SA-2227-FP
Theoretical Estimates of Decay Information for Non-Experimental Nuclides.
HEDL-SA-2227-FP 1444 PC **A02**/MF **A01**

HEDL-TME-79-20
Spent Fuel Data for Waste Storage Programs.
HEDL-TME-79-20 1424 PC **A06**/MF **A01**

HEPL-879
Hadronic Decays of the eta/sub C/.
SLAC-PUB-2594 1446 PC **A02**/MF **A01**

HEW/REG-9-77-04
Evaluation of HEW - Assisted Programs to the Hispanic Population of Clark County, Nevada.
PB81-125726 1309 PC **A07**/MF **A01**

HRP-0902233/6
Health Planning Related to Environmental Factors. Volume II: Foodborne and Waterborne Intestinal Illnesses Module.
HRP-0902233/6 1319 PC **A05**/MF **A01**

HRP-0902234/4
Health Planning Related to Environmental Factors. Volume III: Hazardous and Toxic Substances Module (Two Sections). First Section: Text.
HRP-0902234/4 1320 PC **A06**/MF **A01**

HRP-0902554/5
Community Health Profiles 1979 Rhode Island Dept. of Health.
HRP-0902554/5 1320 PC **A09**/MF **A01**

HRP-0902557/8
Report on Cardiac Catheterization and Open Heart Surgery Services.
HRP-0902557/8 1320 PC **A04**/MF **A01**

HRP-0902558/6
Plan for the Reduction of Excess Hospital Beds in the Bay and Saginaw Subareas.
HRP-0902558/6 1320 PC **A14**/MF **A01**

HRP-0902582/6
Schools of Public Health Trends in Graduate Education,
HRP-0902582/6 1306 PC **A04**/MF **A01**

HRP-0902605/5
Criteria and Standards for Radiation Therapy (Megavoltage) in Southeastern Michigan.
HRP-0902605/5 1320 PC **A04**/MF **A01**

HRP-0902632/9
Policies on Dental Health and Health Planning.
HRP-0902632/9 1320 PC **A05**/MF **A01**

HUD-H-316
Multifamily Property Utilization Task Force.
PB81-139131 1312 PC **A06**/MF **A01**

HUD/PDR-269(2)
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study.
PB81-138968 1310 PC **A09**/MF **A01**

HUD-0000181
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study.
PB81-138968 1310 PC **A09**/MF **A01**

HUD-0001147
Monitoring in Urban Counties.
PB81-138976 1310 PC **A02**/MF **A01**

HUD-0001239
Seminar on Transition and Leadership for Newly-Elected Mayors. Final Report on Fall, 1977 Program.
PB81-138984 1307 PC **A04**/MF **A01**

HUD-0001398
Services in Support of Housing Search: How Necessary and Effective in the Experimental Housing Allowance Program.
PB81-138992 1310 PC **A19**/MF **A01**

HUD-0001401
Enforcing Housing Quality Standards: Some Findings From the Experimental Housing Allowance Program.
PB81-139008 1310 PC **A02**/MF **A01**

HUD-0001404
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program.
PB81-139016 1310 PC **A04**/MF **A01**

HUD-0001410
Integrated Analysis of the Experimental Housing Allowance Program: Sixth Year Report.
PB81-139024 1310 PC **A02**/MF **A01**

HUD-0001415
Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency.
PB81-139032 1301 PC **A03**/MF **A01**

HUD-0001425
Metropolitan Housing and the Income Tax.
PB81-139040 1311 PC **A07**/MF **A01**

HUD-0001426
Urban Housing with Discrete Structures.
PB81-139057 1311 PC **A03**/MF **A01**

HUD-0001427
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 3. Housing Assistance Supply Experiment.
PB81-139065 1311 PC **A04**/MF **A01**

HUD-0001428
Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment.
PB81-139073 1311 PC **A13**/MF **A01**

HUD-0001436
Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment.
PB81-139081 1311 PC **A99**/MF **A01**

HUD-0001441
Codebook for the Survey of Residential Buildings, Site I, Wave 3. Housing Assistance Supply Experiment.
PB81-139099 1311 PC **A08**/MF **A01**

HUD-0001442
Housing Production with Non Profit Sponsors.
PB81-139107 1311 PC **A03**/MF **A01**

HUD-0001445
Training Manual for Interviewers.
PB81-139115 1311 PC **A04**/MF **A01**

HUD-0001446
Field Supervisor Manual.
PB81-139123 1312 PC **A05**/MF **A01**

HUD-0001448
Multifamily Property Utilization Task Force.
PB81-139131 1312 PC **A06**/MF **A01**

HUD-0001449
Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment.
PB81-139149 1312 PC **A13**/MF **A01**

HUD-0001450
Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment.
PB81-139156 1312 PC **A08**/MF **A01**

HUD-0001451
Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment.
PB81-139164 1312 PC **A10**/MF **A01**

NTIS ORDER/REPORT NUMBER INDEX

HUD-0001452
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139172 1312 PC **A05**/MF **A01**

HUD-0001453
Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139180 1312 PC **A12**/MF **A01**

HUD-0001454
Codebook for the Attitude Module of the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139198 1313 PC **A06**/MF **A01**

HUD-0001455
Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139206 1313 PC **A14**/MF **A01**

HUD-0001490
Insurance Coverage and Payment Policies. Rapid Turnaround Neighborhood Preservation Research. Task Number 3.
PB81-139214 1313 PC **A03**/MF **A01**

HUD-0001491
Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395 PC **A07**/MF **A01**

HUD-0001506
Summary of Findings on Home Mortgage Disclosure Act (HMDA) Data Users.
PB81-139230 1299 PC **A03**/MF **A01**

HUD-0001529
Study of Loan Management Operations.
PB81-139248 1301 PC **A03**/MF **A01**

HUD-0001533
Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139255 1313 PC **A13**/MF **A01**

HUD-0001534
Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139263 1313 PC **A13**/MF **A01**

HUD-0001541
Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
PB81-139271 1301 PC **A06**/MF **A01**

HUD-0001542
Study to Indentify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part II: Appendix 1, Home Owner Questionnaire.
PB81-139289 1301 PC **A10**/MF **A01**

HUD-0001543
Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part III: Appendix 2, Lending Institution Questionnaire.
PB81-139297 1301 PC **A05**/MF **A01**

HUD-0001545
Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
PB81-139305 1301 PC **A03**/MF **A01**

HUD-0001547
Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment,
PB81-139313 1313 PC **A04**/MF **A01**

HUD-0001548
Workshop on Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment. Workshop Framework and Paper Subjects,
PB81-139321 1313 PC **A03**/MF **A01**

HUD-0001560
Acute Oral Toxicity Studies in Rats and Rabbits,
PB81-139339 1329 PC **A03**/MF **A01**

HUD-0001561
Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two Year Oral Toxicity Study in Rats. Report Number 2E.
PB81-139347 1329 PC **A05**/MF **A01**

HUD-0001562
Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two year Oral Toxicity Study in Rats. Report Number 2F.
PB81-139354 1330 PC **A16**/MF **A01**

HUD-0001563
Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. One Year Oral Toxicity Study in Monkeys. Report Number 3E.
PB81-139362 1330 PC **A21**/MF **A01**

HUD-0001569
Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
PB81-139370 1374 PC **A03**/MF **A01**

HUD-0001570
Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F),
PB81-139388 1374 PC **A03**/MF **A01**

HUD-0001606
Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139396 1314 PC **A07**/MF **A01**

HUD-0001630
Supplemental Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139404 1314 PC **A06**/MF **A01**

HUD-0001632
Analyzing Allowance Program Administrative Costs: Account Structures and Methodology,
PB81-139412 1314 PC **A05**/MF **A01**

HUD-0001635
Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139420 1314 PC **A04**/MF **A01**

HUD-0001637
Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139438 1314 PC **A13**/MF **A01**

HUD-0001653
Housing Needs of the Rural Elderly and Handicapped.
PB81-139446 1314 PC **A03**/MF **A01**

HUD-0001672
Housing Our Families,
PB81-139453 1314 PC **A09**/MF **A01**

HUD-0001685
Codebook for the Attitude Module of the Household Survey, Site II, Wave 4. Housing Assistance Supply Experiment,
PB81-139461 1315 PC **A06**/MF **A01**

HUD-0001788
Factors Influencing Crime and Instability in Urban Housing Developments,
PB81-128670 1309 PC **A14**/MF **A01**

HUMRRO-FR-D6-74-1
Army Training Simulator Research, Development and Procurement: FY 1976-1980 Projects and Funding Summaries.
AD-A092 295/5 1305 PC **A06**/MF **A01**

IAE-3151
Mechanism of Electric Conductivity in Beryllium Oxide.
IAE-3151 1450 PC **A02**/MF **A01**

IAEA-CN-39/102
Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327 PC **A02**/MF **A01**

IAEA-R-1648-F
Study of Collective Motions in Liquid Metals. Part of a Coordinated Programme on Application of Research Reactor Neutron Scattering Techniques in the Study of Solids. Final Report for the Period 1 August 1975 - 31 October 1979.
IAEA-R-1648-F 1370 PC **A02**/MF **A01**

IAEA-R-1800-F
Effect of Thermal Neutron Irradiation on the Elastic Moduli and Structure of Boron-Containing Crystals. Final Report for the Period 1 October 1976-30 September 1979.
IAEA-R-1800-F 1450 PC **A02**/MF **A01**

IAEA-R-1827-F
Moessbauer Study of Solute Interactions with the Lattice Defect and Grain Boundary. Final Report for the Period 1 September 1976-31 August 1979.
IAEA-R-1827-F 1371 PC **A02**/MF **A01**

ICL-17-78
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351 PC **A18**/MF **A01**

IDA/HQ-79-21815
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401 PC **A10**/MF **A01**

IDA-P-1455
Report of Combat Consumption Modeling Improvement Panel.
AD-A091 882/1 1401 PC **A10**/MF **A01**

IERL-RTP-P-107
Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
PB81-122723 1384 Not available NTIS

IERL-RTP-P-261
Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383 PC **A04**/MF **A01**

IERL-RTP-P-304
Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338 Not available NTIS

IFT-P-11/79
Non-Orthogonal Harmonic-Oscillator Basis for Three-Body Problems.
IFT-P-11/79 1444 PC **A03**/MF **A01**

IFUSP-P-180
Effects of Finite- beta on the Adiabatic Invariant J in Axisymmetric Magnetic Confinement Configurations.
IFUSP-P-180 1448 PC **A02**/MF **A01**

IFVE-OTF-79-96
Description of Final States and Infrared Divergences in Quantum Electrodynamics.
IFVE-OTF-79-96 1444 PC **A02**/MF **A01**

IFVE-OTF-79-139
General Solution of Many-Channel Inverse Scattering Problem.
IFVE-OTF-79-139 1444 PC **A02**/MF **A01**

INDC(IND)-25/GV
ENDF/B Based 27-Group Cross-Sections for Some Rare-Earth and Concrete Elements.
INDC(IND)-25/GV 1422 PC **A03**/MF **A01**

INIS-MF-5640
Conformal Invariance in the Quantum Field Theory.
INIS-MF-5640 1444 PC **A06**/MF **A01**

INIS-MF-5641
Nonlinear Processes of Magnons in Insulating Ferromagnetic Materials.
INIS-MF-5641 1451 PC **A05**/MF **A01**

INIS-MF-5642
Three-Critical Phenomena in the He exp 3 -He exp 4 Mixture.
INIS-MF-5642 1452 PC **A11**/MF **A01**

INIS-MF-5643
Relaxation Rates of Electronic and Nuclear Magnons in Antiferromagnetic Materials.
INIS-MF-5643 1451 PC **A07**/MF **A01**

INIS-MF-5644
Color Centers in KCN: a Structural Analysis of Crystalline Domains.
INIS-MF-5644 1437 PC **A05**/MF **A01**

INIS-MF-5646
Calculation of the Electronic Structure and Contact Hyperfine Parameters of Interstitial Hydrogen in Alkaline - Earth Fluorides.
INIS-MF-5646 1451 PC **A05**/MF **A01**

INIS-MF-5647
Calculation of the Hyperfine Constants of the V /sub K/ Center in CaF sub 2 , SrF sub 2 and BaF sub 2.
INIS-MF-5647 1451 PC **A07**/MF **A01**

INIS-MF-5648
Determination of Fano's Factor in Semiconductors.
INIS-MF-5648 1451 PC **A06**/MF **A01**

INIS-MF-5649
Study of Radiative Corrections with Application to the Electron-Neutrino Scattering.
INIS-MF-5649 1444 PC **A06**/MF **A01**

INIS-MF-5653
Laser Modes as an Eigenfunction of an Operator Equation.
INIS-MF-5653 1440 PC **A03**/MF **A01**

INIS-MF-5654
Magnetic Excitations in Amorphous Ferromagnets.
INIS-MF-5654 1451 PC **A02**/MF **A01**

IPNO-T-79-05
Study by Thermochromatography of Fluorides of Transuranium Elements.
IPNO-T-79-05 1337 PC **A05**/MF **A01**

IPNO-T-79-08
Study of the Odd Mass Transition Nuclei: Exp 185 Hg, exp 187 Hg, exp 189 Hg and exp 183 Ir.
IPNO-T-79-08 1444 PC **A05**/MF **A01**

IPP-4/179
Ignition Experiment - Alternatives.
IPP-4/179 1416 PC **A03**/MF **A01**

IPP-4/180
MHD Pressure Losses in Pipeline Systems for Toroidal Fusion Reactors.
IPP-4/180 1417 PC **A04**/MF **A01**

IPP-4/182
Maximum Attainable Power Density and Wall Load in Tokamaks Underlying Reactor Relevant Constraints.
IPP-4/182 1417 PC **A02**/MF **A01**

ISBN-0-7988-1613-9
Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367 PC **A02**/MF **A01**

ISBN-0-7988-1745-3
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374 PC **A03**/MF **A01**

ISBN-91-540-2981-3
Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394 PC **A03**/MF **A01**

ISBN-91-540-3321-7
Optimal Distribution of Thermal Insulation and Ground Heat Losses,

PB81-122871 1395 PC A05/MF A01

ISBN-91-540-3329-2
Flat Plate Thermal Solar Collectors: A Physical Background,
PB81-135741 1363 PC A06/MF A01

ISN-78-26
Complete Fusion exp 20 Ne + exp 12 C at 110 MeV.
ISN-78-26 1445 PC A04/MF A01

ISVR-TR-104
Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388 PC A07/MF A01

ISVR-TR-107
Prediction of Impact Factor for Military Bridges.
PB81-130379 1386 PC A06/MF A01

JAERI-M-8081
Zircaloy Cladding Embrittlement Due to Steam Oxidation in Stagnant Steam Condition.
JAERI-M-8081 1371 PC A03/MF A01

JAERI-M-8153
Metallurgical and Environmental Factors Influencing Creep Behaviour of Hastelloy-X.
JAERI-M-8153 1371 PC A02/MF A01

JAERI-M-8158
Collection Efficiency of TEDA-Impregnated Actived Charcoal for Low Concentration of Methyl Iodide in Air.
JAERI-M-8158 1424 PC A02/MF A01

JAERI-M-8210
Oxidation Kinetics and Spallation of Oxide Film of the Structural Metal in HTR Helium under Thermal Cycles.
JAERI-M-8210 1371 PC A02/MF A01

JAERI-M-8450
Determination of Plutonium Isotopic Ratios by Ge(Li) gamma-Ray Spectrometry.
JAERI-M-8450 1420 PC A03/MF A01

JAERI-M-8490
Thermochemical and Radiation Chemical Hydrogen Production.
JAERI-M-8490 1454 PC A02/MF A01

JAERI-1258
Studies on the Compatibility of Refractory Metals with Graphite and Nuclear Fuels.
JAERI-1258 1371 PC A03/MF A01

JAYCOR-PSD-200-80-008FR
A Comparison Study and Software Implementation of NORDA Ocean Models.
AD-A092 424/1 1341 MF A01

JEN-459
Plasmator. A Numerical Code for Simulation of Plasma Transport in Tokamaks.
JEN-459 1417 PC A04/MF A01

JINR-E-1-12086
Monotonous Braking of High Energy Hadrons in Nuclear Matter.
JINR-E-1-12086 1445 PC A02/MF A01

JINR-E-2-12369
Elastic Pd and Quasifree A(p, Nd)B Scattering at Intermediate Energies.
JINR-E-2-12369 1445 PC A02/MF A01

JINR-E-2-12637
Suggestion About the Absence of the Phase Transition, Vacuum Degeneration, Spontaneous Symmetry Breaking and Zero-Mass Goldstone-Bosons in QFT Models of the Type Gphi exp 4.
JINR-E-2-12637 1445 PC A02/MF A01

JINR-R-1-12125
Search for Anomalous Dcays of Superdense Nuclei by the Two-Meter Hydrogen and the Two-Meter Propane Bubble Chamber Techniques.
JINR-R-1-12125 1445 PC A02/MF A01

JINR-R-2-12670
Structure of Representations of Conformal Supergroup in the OSp(1,4) Basis.
JINR-R-2-12670 1449 PC A02/MF A01

JINR-R-4-12671
Calculation of Energy Levels of mu -Mesic Molecules of Hydrogen Isotopes Using a Continuous Analog of the Newton Method and Subspace Iteration Method.
JINR-R-4-12671 1339 PC A02/MF A01

JINR-R-5-12459
Discrete Subgroups of the Three-Dimensional Rotation Group.
JINR-R-5-12459 1449 PC A02/MF A01

JINR-R-14-12649
Ion Bombardment Effect on the Structure of Metallic Films.
JINR-R-14-12649 1371 PC A02/MF A01

JTCG/AS-79-C-003
Infrared Measurement Variability Analysis.
AD-A092 068/6 1411 PC A05/MF A01

JTR-80-02
Multi-Sensor Detection Study.
AD-A091 954/8 1358 PC A06/MF A01

JUEL-SPEZ-47
Induced Isospin Mixing in Direct Nuclear Reactions.
JUEL-SPEZ-47 1445 PC A07/MF A01

K/ET-594
Extrapolation to the U-F System from the Mo-F System.
K/ET-594 1337 PC A02/MF A01

K/UR-140
Hydrogeochemical and Stream Sediment Reconnaissance Basic Data for Grand Island NTMS Quadrangle, Nebraska/Kansas.
GJBX-185(80) 1346 PC E09/MF$3.00

KA-TR-158
FAB Code Computations of a 1-KT Nuclear Free-Air Blast Wave to Low Shock Overpressures.
AD-A092 143/7 1421 PC A04/MF A01

KA-TR-176
Calculation of Multiple Burst Interactions for Six Simultaneous Explosions of 120 Ton ANFO Charges.
AD-A091 978/7 1435 PC A04/MF A01

KFK-2386/I
Status of the Nuclear Data Library KEDAK-3. July 1979.
KFK-2386/I 1445 PC A03/MF A01

KFK-2557
Solvent Extraction Flowsheet for a Large-Scale LWR Fuel Reprocessing Plant.
KFK-2557 1429 PC A02/MF A01

KFK-2860
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 1. Performance and Results.
KFK-2860 1429 PC A05/MF A01

KFK-2861
As-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 2. Collection and Evaluation of Representative Spectra.
KFK-2861 1429 PC A06/MF A01

KFK-2862
AS-76 Interlaboratory Experiment on the alpha Spectrometric Determination of Pu-238. Pt. 3. Preparation and Characterization of Samples.
KFK-2862 1429 PC A04/MF A01

KFKI-1979-26
HOTRAN-3 Program for Reactor Core Thermohydraulic Studies in the Three-Channel Approximation.
KFKI-1979-26 1428 PC A02/MF A01

KFKI-1979-65
Tetrads of Observers and Einstein's Equations.
KFKI-1979-65 1449 PC A02/MF A01

KFKI-1980-03
Manifestation of the Frustration Effect in S= 1/2 Quantum Spin Systems.
KFKI-1980-03 1451 PC A02/MF A01

KY-697
License Application for Type 48HX Cylinder for Shipment of Natural Assay UF sub 6.
KY-697 1422 PC A04/MF A01

LA-UR-80-2675
Intermediate Structure in Unresolved Resonances of Fissile and Fertile Nuclides.
LA-UR-80-2675 1445 PC A02/MF A01

LA-UR-80-2702
Systematics of S- and P-Wave Radiation Widths.
LA-UR-80-2702 1423 PC A02/MF A01

LA-UR-80-2707
Prompt Fission Neutron Spectra and Anti nu p.
LA-UR-80-2707 1423 PC A03/MF A01

LA-UR-80-3099
Verification of Timing Routines.
LA-UR-80-3099 1357 PC A02/MF A01

LA-8194-M
CMB-8 Material Balance System.
LA-8194-M 1430 PC A09/MF A01

LA-8468-T
Abstract Model of the Finite Element Method.
LA-8468-T 1377 PC A04/MF A01

LA-8488-T
Theory of the Arc Discharge in Air Blast Breakers.
LA-8488-T 1417 PC A07/MF A01

LA-8524-PR
Applied Nuclear Data Research and Development. Progress Report, April 1-June 30, 1980.
LA-8524-PR 1445 PC A03/MF A01

LA-8539-PR
Fission Product Release. Progress Report, April 1-June 30, 1980.
LA-8539-PR 1424 PC A02/MF A01

LBL-10301
Proceedings of the Heavy Ion Fusion Workshop.
LBL-10301 1441 PC A23/MF A01

LBL-10688
Workshop on Nuclear Dynamics.
LBL-10688 1445 PC A08/MF A01

LBL-10768
Residential Radon Daughter Monitor Based on alpha Spectroscopy.
LBL-10768 1422 PC A05/MF A01

LBL-10899
Pion Production in Nucleus-Nucleus Collisions Below a Few GeV/Nucleon: Past, Present and Future.
LBL-10899 1445 PC A05/MF A01

LBL-11167
Speciation of Trace Organic Ligands and Inorganic and Organometallic Compounds in Oil Shale Process Waters.
LBL-11167 1454 PC A02/MF A01

LBL-11429
Rapporteur Talk for IAEA Fusion Meeting, Brussels.
LBL-11429 1417 PC A02/MF A01

LBL-11434
Photoelectron Photoion Molecular Beam Spectroscopy.
LBL-11434 1337 PC A08/MF A01

LBL-11510
Low Energy Weak Interactions and Decays.
LBL-11510 1445 PC A03/MF A01

LBL-11517
Nonlinear Models in 2 + Epsilon Dimensions.
LBL-11517 1446 PC A10/MF A01

LBL-11561
Open and Hidden Charm Muoproduction.
LBL-11561 1446 PC A02/MF A01

LDGO-2968
Reprint: Morphology and Quaternary Sedimentation of the Mozambique Fan and Environs, Southwestern Indian Ocean.
AD-A091 968/8 1348 PC A02/MF A01

LDGO-2992
Reprint: Aragonite from Deep Sea Ultramafic Rocks.
AD-A091 967/0 1342 PC A02/MF A01

LDGO-3007
Reprint: Seafloor and Near-Surface Sound Velocities from Barents Sea Sonobuoy Data.
AD-A091 966/2 1436 PC A02/MF A01

LDGO-3025
Reprint: Planktonic Microfossils and the Recognition of Ancestors.
AD-A092 508/1 1342 PC A02/MF A01

LMSA/DRA-80/04
A Six State Study of Impasse Procedures in the Public Sector.
PB81-130718 1307 PC A12/MF A01

LPC-79-16
Simple Parametrization of the Structure Functions of the Photon.
LPC-79-16 1446 PC A02/MF A01

LYCEN-7868
Contribution of Surface Analysis Spectroscopic Methods to the Lubrication Field.
LYCEN-7868 1373 PC A05/MF A01

LYCEN-7923
SCF MS X Alpha Study of Ionization Energies and Atomic Populations of Octaedral TaO sub 6-7 Cluster.
LYCEN-7923 1451 PC A02/MF A01

LYCEN-7926
Marker Behavior of Implanted Xenon During the Anodic Oxidation of Aluminium: Evidence and Interpretation of Dose Dependent Splitting Effect.
LYCEN-7926 1371 PC A02/MF A01

LYCEN-7941
Amorphous Semiconductor Thin Films Characterization by Nuclear Microanalysis.
LYCEN-7941 1337 PC A03/MF A01

LYCEN-7965
Contribution to the Microscopic Description of Nuclei Near exp 132 SN.
LYCEN-7965 1446 PC A05/MF A01

MA-RD-930-80033-VOL-1
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303 PC A04/MF A01

MA-RD-930-80033-VOL-2
Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304 PC A99/MF A01

MATH-RES-123
A Non-Parametric Approach to the Change-Point Problem.
PB81-132854 1377 PC A03/MF A01

MBS/DIM-64/8
Dimensions/NBS. Volume 64, Number 8, October 1980.
PB81-133654 1397 PC A03/MF A01

MCR-80-500
SOLCOST Support and Maintenance. Quarterly Technical Status Report.
DOE/ET/20108-T1 1357 PC A02/MF A01

MDC-E2305
Dynamic Target Acquisition: Empirical Models of Operator Performance.
AD-A092 263/3 1308 PC A10/MF A01

MDC-G4163
Gasdynamic Particle Accelerators - An Optimization.
AD-A092 069/4 1395 PC A03/MF A01

MIMEO SER-1307
Extremal and Related Properties of Stationary Processes. Part II. Extreme Values in Continuous Time.

NTIS ORDER/REPORT NUMBER INDEX

AD-A092 163/5 1375 PC **A08**/MF **A01**

MIT-EL-80-001
Prospects for the Recovery of Uranium from Seawater. Final Report.
MIT-EL-80-001 1371 PC **A12**/MF **A01**

MITNE-231
Prospects for the Recovery of Uranium from Seawater. Final Report.
MIT-EL-80-001 1371 PC **A12**/MF **A01**

MRC-DA-343-PT-1
Ferrite/Dielectric High Power Phase Shifter Development. Part I. The TEM Phasor.
AD-912 789/5 1360 PC **A07**/MF **A01**

MRC-DA-343-PT-2
Ferrite/Dielectric High Power Phase Shifter Development Part II. On Broadband Y-Junction Circulators.
AD-912 790/3 1360 PC **A07**/MF **A01**

MRC-DA-343-PT-3
Ferrite/Dielectric High Power Phase Shifter Development. Part III. Electromagnetic Wave Propagation in Multi-Layer Composite Media.
AD-912 791/1 1360 PC **A05**/MF **A01**

MRC-DA-343-PT-4
Ferrite/Dielectric High Power Phase Shifter Development. Part IV. Arc-Plasma Spray Fabrication and Material Studies.
AD-912 792/9 1360 PC **A04**/MF **A01**

MRC-TSR-2078
A Population of Linear, Second Order, Elliptic Partial Differential Equations on Rectangular Domains. Part 1.
AD-A092 248/4 1376 PC **A03**/MF **A01**

MS-5263
Reprint: Image Restoration by Short Space Spectral Subtraction.
AD-A092 298/9 1358 Not available NTIS

MTR-7535
Concepts for Utilization of Video Discs in Military Applications.
AD-A092 029/8 1398 PC **A04**/MF **A01**

N00014-0051/5
The Effect of Crack Tip Plasticity on the Determination of Dynamic Stress Intensity Factors by the Optical Method of Caustics.
AD-A092 074/4 1449 PC **A03**/MF **A01**

NADC-79219-60
Navy Manager's Guide for the Design Sections of MIL-H-46855.
AD-A092 009/0 1302 PC **A04**/MF **A01**

NADC-80208-60
Design, Fabrication, and Testing of the Maximum Performance Ejection System (MPES) Seat Structure.
AD-A092 292/2 1288 PC **A06**/MF **A01**

NAEC-ENG-6703-REV-16
Compilation of Data Covering Aircraft Servicing Facilities Aboard Aviation and Amphibious Aviation Ships. Revision 16,
AD-A092 392/0 1392 PC **A15**/MF **A01**

NAEC-92-132
Effect of Lubricant Contaminants on Wear Rates of Lubricated Components.
AD-A092 289/8 1373 PC **A03**/MF **A01**

NAMRU-3-1195
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319 PC **A02**/MF **A01**

NAMRU-3-1200
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316 PC **A02**/MF **A01**

NAMRU-3-ACC-1194
Reprint: The Subgenius Persicargas (Ixodoidea; Argasidae; Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
AD-A092 462/1 1316 PC **A02**/MF **A01**

NAMRU-3-ACC-1197
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318 PC **A02**/MF **A01**

NAMRU-3-ACC-1198
Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327 PC **A02**/MF **A01**

NAMRU-3-ACC-1199
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319 PC **A02**/MF **A01**

NAMRU-3-TR-19/80
Reprint: The Subgenius Persicargas (Ixodoidea; Argasidae; Argas) 31. The Life Cycle of A. (P.) persicus in the Laboratory.
AD-A092 462/1 1316 PC **A02**/MF **A01**

NAMRU-3-TR-20/80
Reprint: Further Experience on the use of Oxamniquine in the Treatment of Advanced Intestinal Schistosomiasis.
AD-A092 330/0 1319 PC **A02**/MF **A01**

NAMRU-3-TR-21/80
Reprint: A Study to Evaluate Non-Fatal Rabies in Animals.
AD-A092 329/2 1318 PC **A02**/MF **A01**

NAMRU-3-TR-22/80
Reprint: The Subgenus Persicargas (Ixodoidea: Argasidae: Argas) 32. Effect of Substerilizing Doses of Gamma Radiation on Male Fertility and Progeny of A. (P.) Arboreus.
AD-A092 487/8 1327 PC **A02**/MF **A01**

NAMRU-3-TR-23/80
Reprint: The Mechanisms of Pathogenicity in the Tick Paralyses.
AD-A092 331/8 1319 PC **A02**/MF **A01**

NAMRU-3-TR-24/80
Reprint: Recent Developments in Biomedical Knowledge of Argas Ticks (Ixodoidea: argasidae).
AD-A092 328/4 1316 PC **A02**/MF **A01**

NASA-CR-3251-VOL-1
PAN AIR-A Computer Program for Predicting Subsonic or Supersonic Linear Potential Flows about Arbitrary Configurations Using a Higher Order Panel Method. Volume I. Theory Document (Version 1.0).
AD-A092 175/9 1438 PC **A25**/MF **A01**

NASA-CR-165156
MOD-2 Wind Turbine Farm Stability Study.
DOE/NASA/0134-1 1365 PC **A08**/MF **A01**

NASA-E-455
Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455 PC **A02**/MF **A01**

NASA-TP-1708
Off-Design Performance Loss Model for Radial Turbines with Pivoting, Variable-Area Stators.
AD-A092 383/9 1455 PC **A02**/MF **A01**

NATICK/CEMEL-216
Production of Insulated Footwear Using Liquid Injection Molding Equipment. 1. Method.
AD-A091 881/3 1400 MF **A01**

NATICK-TR-80/019
Production of Insulated Footwear Using Liquid Injection Molding Equipment. 1. Method.
AD-A091 881/3 1400 MF **A01**

NAVEODFAC-TR-199
Penetration and Cutting Effects of Lead-Sheathed Flexible Linear Shaped Charges and Explosive-Filled Linear Shaped-Charge Containers (Mark 7 Mods 1 through 8 and Mark 8 Mod 2).
AD-B032 093/7 1433 PC **A06**/MF **A01**

NAVEODFAC-TR-211
Spectroscopic Investigations of Energetic Materials and Associated Impurities.
AD-B038 157/4 1433 PC **A07**/MF **A01**

NAVTRAEQUIPC-IH-322
Glideslope Descent-Rate Cuing to Aid Carrier Landings.
AD-A092 193/2 1287 PC **A04**/MF **A01**

NAVTRAEQUIPC-76-C-0116-2
MAGLAD Effective Simulation, Range and Alignment Tolerance Demonstration Test Plan,
AD-A092 267/4 1304 PC **A04**/MF **A01**

NAVTRAEQUIPC-76-C-0116-3
MAGLAD. Trainer Engineering Report Demonstration Results.
AD-A092 477/9 1305 PC **A06**/MF **A01**

NAVTRAEQUIPC-77-C-0162-4
Ground Controlled Approach Controller Training System (GCA-CTS) Student Guide.
AD-A091 930/8 1303 PC **A09**/MF **A01**

NAVTRAEQUIPC-79-C-0042-1
Precision Approach Radar Training System (PARTS) Training Effectiveness Evaluation.
AD-A091 912/6 1303 PC **A07**/MF **A01**

NBS/SP-500-69
Computer Science and Technology: An Analytic Study of a Shared Device Among Independent Computing Systems.
PB81-125783 1357 PC **A09**/MF **A01**

NBS/SP-596
Ultrasonic Materials Characterization.
PB81-124984 1396 PC **A99**/MF **A01**

NBSIR-80-2133
Data Bases Available at the National Bureau of Standards Library.
PB81-132870 1299 PC **A04**/MF **A01**

NBSIR-80-2144
Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1363 PC **A07**/MF **A01**

NBSIR-80-2161
A 'Reference Building' Approach to Building Energy Performance Standards for Single-Family Residences.
PB81-135642 1380 PC **A03**/MF **A01**

NCHSR-8-56
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321 PC **A02**/MF **A01**

NCHSR-80-55
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321 PC **A09**/MF **A01**

NCHSR-80-57
Illness Behavior in Mid-Life Women. Executive Summary.
PB81-125536 1309 PC **A06**/MF **A01**

NCHSR-80-60
Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321 PC **A14**/MF **A01**

NCHSR-80-61
Regulating Hospital Capital Investment: The Experience in Massachusetts. Executive Summary.
PB81-130544 1321 PC **A02**/MF **A01**

NCHSR-80-62
Regulating Hospital Capital Investment: The Experience in Massachusetts. Final Report.
PB81-130551 1321 PC **A17**/MF **A01**

NCHSR-80-73
Estimation of Spatial Demand for Hospital Services.
PB81-135790 1322 PC **A09**/MF **A01**

NCHSR-81-1
Determinants and Effects of Organizational Strategies of Control Directed at Quality of Care in Organized Ambulatory Care Settings.
PB81-133613 1322 PC **A16**/MF **A01**

NCHSR-81-5
Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
PB81-133365 1307 PC **A14**/MF **A01**

NCHSR-81-16
The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321 PC **A14**/MF **A01**

NCHSR-81-17
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321 PC **A02**/MF **A01**

NCS-TIB-80-5
Revised CCITT Recommendation X.25 1980.
AD-A092 394/6 1408 PC **A08**/MF **A01**

NCS-TIB-80-6
Measurement of Compression Factor and Error Sensitivity Factor of the Modified READ Facsimile Coding Technique.
AD-A092 395/3 1408 PC **A05**/MF **A01**

NCS-TIB-80-7
Use of a Microprocessor to Implement an ADCCP Protocol (Federal Standard 1003).
AD-A092 272/4 1408 PC **A06**/MF **A01**

NCSC-TR-353-80
MK 11 and MK 12 CO2 Scrubber Development.
AD-A092 314/4 1323 PC **A06**/MF **A01**

NDRI-PR-80-13
Summaries of Research, Fiscal Year 1980.
AD-A092 232/8 1318 PC **A03**/MF **A01**

NDRI-PR-80-14
Reprint: Influence of Interdental Contacts on Periodontal Status.
AD-A092 425/8 1319 PC **A02**/MF **A01**

NEDU-14-80
MK 16 MOD 0 Underwater Breathing Apparatus (UBA) TECHEVAL Report.
AD-A091 892/0 1323 PC **A05**/MF **A01**

NEFES/81-134
Flowering and Seed Production in Seven Hardwood Species.
PB81-141996 1292 PC **A02**/MF **A01**

NEFES/81-144
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292 PC **A02**/MF **A01**

NEFES/81-146
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375 PC **A02**/MF **A01**

NEFES/81-152
SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374 PC **A03**/MF **A01**

NEFES/81-160
Carbohydrate Levels in Current-year Shoots of Sugar Maple.
PB81-134199 1291 PC **A02**/MF **A01**

NEFES/81-161
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291 PC **A02**/MF **A01**

NEFES/81-162
Skyline Harvesting in Appalachia.
PB81-134173 1291 PC **A02**/MF **A01**

NEPRF-AR-77-03
Navy Tactical Applications Guide. Volume I. Techniques and Applications of Image Analysis,

AD-B024 969/8 1400 PC A10/MF A01

NEPRF-TECH PAPER-5-76-CH-2

Typhoon Havens Handbook for the Western Pacific and Indian Oceans.
AD-A092 373/0 1295 PC A05/MF A01

NERACEDBNT0336

Magnetic Separation of Materials. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855249 1391 PC N01/MF N01

NERACEDBNT0433

Engineering Information Systems. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855348 1299 PC N01/MF N01

NERACEDBNT0562

Nylon Products. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855405 1374 PC N01/MF N01

NERACEDBNT1232

Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
PB81-851818 1398 PC N01/MF N01

NERACEDBNT1388

Regional Seismicity. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850935 1350 PC N01/MF N01

NERACEDBNT1409

Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850950 1448 PC N01/MF N01

NERACEDBNT1425

Accelerometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851503 1397 PC N01/MF N01

NERACEDBNT1584

Centrifuges. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851123 1397 PC N01/MF N01

NERACEDBNT1622

Cyclotrons. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851057 1441 PC N01/MF N01

NERACEDBNT1628

Densitometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851255 1397 PC N01/MF N01

NERACEDBNT1669

Extractive Metallurgy. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851321 1372 PC N01/MF N01

NERACEDBNT1690

Systems Analysis Applied to Energy Forecasting. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-850984 1363 PC N01/MF N01

NERACEDBNT1706

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851008 1388 PC N01/MF N01

NERACEDBNT1831

Hydrocracking. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851610 1339 PC N01/MF N01

NERACEDBNT1837

Resource Conservation and Recovery Act (RCRA). January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851024 1363 PC N01/MF N01

NERACEDBNT1840

Heat Exchangers for Space Heating. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851032 1380 PC N01/MF N01

NERACEDBNT1848

Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851362 1348 PC N01/MF N01

NERACEDBNT2044

Cost Benefit Analysis Methods. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851651 1297 PC N01/MF N01

NERACEI NT0233

Computer Simulation of Aircraft. July, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855058 1290 PC N01/MF N01

NERACEI NT0237

Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294 PC N01/MF N01

NERACEI NT0241

Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855082 1393 PC N01/MF N01

NERACEI NT0244

Varistors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855090 1353 PC N01/MF N01

NERACEI NT0270

Plastics Extrusion. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855124 1390 PC N01/MF N01

NERACEI NT0295

Thermocouple Applications. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855157 1398 PC N01/MF N01

NERACEI NT0296

Computer Controlled Forging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855165 1391 PC N01/MF N01

NERACEI NT0333

Sliding Contact Lubricants. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855223 1373 PC N01/MF N01

NERACEI NT0336

Magnetic Separation of Materials. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855231 1391 PC N01/MF N01

NERACEI NT0371

Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855272 1374 PC N01/MF N01

NERACEI NT0390

Encapsulation of Electronic Circuits. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855298 1391 PC N01/MF N01

NERACEI NT0395

Ion Exchange Resins. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855306 1339 PC N01/MF N01

NERACEI NT0421

Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322 PC N01/MF N01

NERACEI NT0427

Polyethylene Adhesives. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855322 1367 PC N01/MF N01

NERACEI NT0431

Hot Stamping. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855330 1391 PC N01/MF N01

NERACEI NT0435

Mobile Telephone and Paging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855355 1410 PC N01/MF N01

NERACEI NT0436

Ultrasonic Transducers. July, 1974-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855363 1353 PC N01/MF N01

NERACEI NT0473

Packaging Machines. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855371 1391 PC N01/MF N01

NERACEI NT0485

Anodizing Aluminum. January, 1969-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855389 1391 PC N01/MF N01

NERACEI NT0564

Synthetic Fibers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855397 1369 PC N01/MF N01

NERACEI NT0581

Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855413 1390 PC N01/MF N01

NERACEI NT0680

Solenoid Valves. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855462 1394 PC N01/MF N01

NERACEI NT0859

Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855553 1391 PC N01/MF N01

NERACEI NT1232

Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-851826 1398 PC N01/MF N01

NERACEI NT1233

Nondestructive Testing of Joints. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850919 1397 PC N01/MF N01

NERACEI NT1425

Accelerometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851511 1398 PC N01/MF N01

NERACEI NT1584

Centrifuges. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851131 1397 PC N01/MF N01

NERACEI NT1622

Cyclotrons. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851065 1441 PC N01/MF N01

NERACEI NT1627

Demodulators. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851297 1361 PC N01/MF N01

NERACEI NT1628

Densitometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851263 1397 PC N01/MF N01

NERACEI NT1669

Extractive Metallurgy. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851339 1372 PC N01/MF N01

NERACEI NT1670

Extraterrestrial Atmospheres. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851198 1292 PC N01/MF N01

NERACEI NT1706

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851016 1388 PC N01/MF N01

NERACEI NT1709

Foundation Piles for Land Construction. December, 1976-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850240 1395 PC N01/MF N01

NERACEI NT1710

Foundation Piles for Marine Platforms. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850232 1393 PC N01/MF N01

NERACEI NT1766

Sailplanes. January, 1970-July, 1980 (Citations from the Engineering Index Data Base).
PB81-850604 1290 PC N01/MF N01

NERACEI NT1831

Hydrocracking. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851628 1339 PC N01/MF N01

NERACEI NT1917

Kalman Filters. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851107 1397 PC N01/MF N01

NERACEI NT1930

Profilometers. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851719 1398 PC N01/MF N01

NERACEI NT1931

Professional Continuing Education. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851701 1307 PC N01/MF N01

NERACEI NT1939

Vacuum Diffusion Welding. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851685 1390 PC N01/MF N01

NERACEI NT2044

Cost Benefit Analysis Methods. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851669 1297 PC N01/MF N01

NERACIAANT0237

Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855066 1294 PC N01/MF N01

NERACIAANT0244

Varistors. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855108 1353 PC N01/MF N01

NERACIAANT0275

Stepper Motors. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855132 1358 PC N01/MF N01

NERACIAANT0295

Thermocouple Applications. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855140 1398 PC N01/MF N01

NERACIAANT0304

Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391 PC N01/MF N01

NERACIAANT0333

Sliding Contact Lubricants. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855215 1373 PC N01/MF N01

NERACIAANT0357

Fire Detection and Extinguishment. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855256 1394 PC N01/MF N01

NERACIAANT0593

Cathode Ray Tubes. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).

PB81-855421 1353 PC **N01**/MF **N01**

NERACIAANT0654
Isostatic Pressing. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855439 1391 PC **N01**/MF **N01**

NERACIAANT0655
Laminar Flow of Fluids in Pipes. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855447 1439 PC **N01**/MF **N01**

NERACIAANT0669
Sheet Metal Forming. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855454 1391 PC **N01**/MF **N01**

NERACIAANT0771
Biotelemetry. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855496 1316 PC **N01**/MF **N01**

NERACIAANT1232
Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851834 1398 PC **N01**/MF **N01**

NERACIAANT1233
Nondestructive Testing of Joints. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850927 1397 PC **N01**/MF **N01**

NERACIAANT1256
Nondestructive Testing of Fractures. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851792 1398 PC **N01**/MF **N01**

NERACIAANT1409
Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850968 1448 PC **N01**/MF **N01**

NERACIAANT1425
Accelerometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851529 1398 PC **N01**/MF **N01**

NERACIAANT1584
Centrifuges. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851149 1397 PC **N01**/MF **N01**

NERACIAANT1622
Cyclotrons. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851073 1441 PC **N01**/MF **N01**

NERACIAANT1627
Demodulators. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851305 1361 PC **N01**/MF **N01**

NERACIAANT1628
Densitometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851271 1397 PC **N01**/MF **N01**

NERACIAANT1766
Sailplanes. January, 1972-March, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850596 1290 PC **N01**/MF **N01**

NERACIAANT1865
Ocean Wave Spectra. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851354 1342 PC **N01**/MF **N01**

NERACIAANT1917
Kalman Filters. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851099 1397 PC **N01**/MF **N01**

NERACIAANT2044
Cost Benefit Analysis Methods. January, 1972-August, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851677 1297 PC **N01**/MF **N01**

NERACUSGNT0712
Jet Stream. June, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-855470 1296 PC **N01**/MF **N01**

NERACUSGNT1232
Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851800 1398 PC **N01**/MF **N01**

NERACUSGNT1256
Nondestructive Testing of Fractures. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851784 1398 PC **N01**/MF **N01**

NERACUSGNT1409
Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
PB81-850943 1448 PC **N01**/MF **N01**

NERACUSGNT1425
Accelerometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851495 1397 PC **N01**/MF **N01**

NERACUSGNT1584
Centrifuges. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851115 1397 PC **N01**/MF **N01**

NERACUSGNT1622
Cyclotrons. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851040 1441 PC **N01**/MF **N01**

NERACUSGNT1627
Demodulators. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851289 1361 PC **N01**/MF **N01**

NERACUSGNT1628
Densitometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851248 1397 PC **N01**/MF **N01**

NERACUSGNT1669
Extractive Metallurgy. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851313 1372 PC **N01**/MF **N01**

NERACUSGNT1706
Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388 PC **N01**/MF **N01**

NERACUSGNT1715
Spent Nuclear Fuel Recovery. May, 1972-February, 1980 (Citations from the NTIS Data Base).
PB81-850687 1430 PC **N01**/MF **N01**

NERACUSGNT1766
Sailplanes. January, 1970-March, 1980 (Citations from the NTIS Data Base).
PB81-850612 1290 PC **N01**/MF **N01**

NERACUSGNT1831
Hydrocracking. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851602 1339 PC **N01**/MF **N01**

NERACUSGNT1917
Kalman Filters. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851081 1397 PC **N01**/MF **N01**

NERACUSGNT1929
Profit Performance. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851727 1301 PC **N01**/MF **N01**

NERACUSGNT1938
Long-range Forecasting Methods. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851693 1297 PC **N01**/MF **N01**

NERACUSGNT2034
Incentive Contracts. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851636 1297 PC **N01**/MF **N01**

NERACUSGNT2040
Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851909 1297 PC **N01**/MF **N01**

NERACUSGNT2121
Educational Level Projections. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851891 1307 PC **N01**/MF **N01**

NIDA/RD-80-05
GC/MS Assays for Abused Drugs in Body Fluids.
PB81-133746 1326 PC **A10**/MF **A01**

NIDR/CR-80-12
Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
PB81-122962 1320 PC **A09**/MF **A01**

NIH-N01-HV-4-2950-6
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
PB81-132987 1324 PC **A03**/MF **A01**

NIH-N01-HV-7-2936-2
Development and Evaluation of a Long-Term Low Profile Intracorporeal (Abdominal) Left Ventricular Assist Device (THI E-Type ALVAD) Fascicle I.
PB81-131773 1324 PC **A23**/MF **A01**

NIIEFA-P-A-0424
Peculiarities of Radiation Heat Transfer of Structural Elements of High-Temperature Physical Installations.
NIIEFA-P-A-0424 1417 PC **A02**/MF **A01**

NIIEFA-P-B-0430
Analysis of the System of Poloidal Fields in the "T-10M" Device.
NIIEFA-P-B-0430 1417 PC **A02**/MF **A01**

NMAB-367-1
The Investigation of Grain Elevator Explosions.
PB81-123549 1291 PC **A02**/MF **A01**

NMT/TERA-T-80-1356-U-VOL-1
HIBAL Program Preliminary Warhead-Design. Volume I.
AD-A092 071/0 1432 PC **A09**/MF **A01**

NMT/TERA-T-80-1356-U-VOL-2
HIBAL Program. Preliminary Warhead-Design. Volume II. Appendices.
AD-A092 072/8 1432 PC **A06**/MF **A01**

NOAA-NDSR-70-2
Arizona Floods of September 5 and 6, 1970. A Report to the Administrator.
PB81-138067 1394 PC **A03**/MF **A01**

NOAA-TM-ERL-GLERL-27
New Observations on the Daily Variations of Natural Ice Albedo.
PB81-132789 1350 PC **A03**/MF **A01**

NOAA/TM/ERL/RFC-6
In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295 PC **A04**/MF **A01**

NOAA-79100903
Arizona Floods of September 5 and 6, 1970. A Report to the Administrator.
PB81-138067 1394 PC **A03**/MF **A01**

NOAA-79100904
The Lubbock, Texas, Tornado May 11, 1970. A Report to the Administrator.
PB81-137788 1295 PC **A03**/MF **A01**

NOAA-80101509-1
Reprint: Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
PB81-120685 1340
(Order as PB81-120677, PC **A03**/MF **A01**)

NOAA-80101509-2
Reprint: The Efficiency of Mollies, 'Poecilia mexicana', as Live Bait for Pole-and-Line Skipjack Fishing: Fishing Trials in the Tropical Central Pacific,
PB81-120693 1316
(Order as PB81-120677, PC **A03**/MF **A01**)

NOAA-80101509-3
Reprint: Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
PB81-120701 1340
(Order as PB81-120677, PC **A03**/MF **A01**)

NOAA-80101509-4
Reprint: Recent Observations of a Large Eddy in the Gulf of Alaska,
PB81-120719 1342
(Order as PB81-120677, PC **A03**/MF **A01**)

NOAA-80101509-5
Reprint: Instrument for Determining Depth of Dehydration of Frozen Fish,
PB81-120727 1323
(Order as PB81-120677, PC **A03**/MF **A01**)

NOAA-80101510-1
Reprint: Implications of Transplantations to Aquaculture and Ecosystems,
PB81-120743 1316
(Order as PB81-120735, PC **A03**/MF **A01**)

NOAA-80101510-2
Reprint: The Snail Resource of the Eastern Bering Sea and Its Fishery,
PB81-120750 1317
(Order as PB81-120735, PC **A03**/MF **A01**)

NOAA-80101510-3
Reprint: Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
PB81-120768 1317
(Order as PB81-120735, PC **A03**/MF **A01**)

NOAA-80102701
California's Salmon Resource - Its Biology, Use and Management.
PB81-134041 1340 PC **A03**/MF **A01**

NOAA-80102802
The Equatorial Latitude of Auroral Activity during 1972-1977,
PB81-132912 1294 PC **A04**/MF **A01**

NOAA-80110401
New Observations on the Daily Variations of Natural Ice Albedo.
PB81-132789 1350 PC **A03**/MF **A01**

NOAA-80110407
In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295 PC **A04**/MF **A01**

NOLTR-74-177
A Characterization Study of Several Heat Resistant Explosives.
AD-B000 729/4 1432 PC **A03**/MF **A01**

NOS-IHTR-567
Nitrate Film Testing for the National Archives. December 1978 Fire Investigation.
AD-B040 437/6 1331 PC **A03**/MF **A01**

NOSC/TD-356
Electronic Design of an Electronic High Torque-to-Inertia Servosystem. Candidate System uses Include Missile Guidance, Surveillance, and Tracking.
AD-A092 141/1 1357 PC **A06**/MF **A01**

NOSC-TD-365
Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452 PC **A18**/MF **A01**

NOSC/TN-577
Advanced Ship System Concepts for Hydrographic Surveying.

AD-A092 374/8 1392 PC A04/MF A01

NOSC/TR-574

Hardware and Performance Evaluation: Tethered Float Breakwater Near-Shore Ocean Model.
AD-A092 059/5 1381 PC A06/MF A01

NOSC/TR-579

Nonresonant Acoustic Projector Project. Mechanical 5-50 Hz Device Provides Stable Underwater Acoustic Output with Frequency and Amplitude Controllable and Independent of Depth.
AD-A092 181/7 1406 PC A03/MF A01

NPRDC-SR-80-33

Computer-Managed Instruction in the Navy. I. Research Background and Status.
AD-A092 481/1 1305 PC A02/MF A01

NPS52-80-011

An ADA Language Model of the AN/SPY-1A Component of the AEGIS Weapon System.
AD-A092 260/9 1412 PC A03/MF A01

NPS-54-80-011

Evaluation of the Utilization of Research and Development Results by the Naval Facilities Engineering Command.
AD-A092 469/6 1396 PC A08/MF A01

NPS56-80-013

Brotherhood-in-Arms East German Foreign Policy in Africa 'Kalashnikoffs, not Coca Cola Bring Self-Determination to Angola' Volksarme, 1978.
AD-A092 402/7 1302 PC A06/MF A01

NPS-61-80-018

Overwater Optical Scintillation Measurements during MAGAT-1980.
AD-A092 127/0 1440 PC A02/MF A01

NPS67-80-005

Study of Gas Dynamic Effects in Non-Uniform High Pressure Electrical Discharges.
AD-A092 413/4 1437 PC A05/MF A01

NPS67-80-006

An Experimental Investigation of the Dual Chamber Rocket Motor.
AD-A092 135/3 1456 PC A04/MF A01

NRCN(TN)-023

Computer Program for the Determination of X-Ray Reflections from a Randomly Oriented Polycrystalline Sample by Diffractometer.
NRCN(TN)-023 1437 PC A02/MF A01

NRL-MR-4319

Doppler Velocimeter for Laser Accelerated Targets.
NRL-MR-4319 1417 PC A02/MF A01

NRL-MR-4350

Laser Fusion Studies at NRL.
NRL-MR-4350 1417 PC A02/MF A01

NRL-MR-4353

Interferometric Measurement of Small Refraction Angles.
NRL-MR-4353 1448 PC A02/MF A01

NRL-MR-4356

Preheat Studies on Laser Ablatively-Accelerated Foils.
NRL-MR-4356 1417 PC A02/MF A01

NRL-MR-4369

NRL Inertial Confinement Fusion Theory Program 1979 Annual Report, October 1978 - December 1979.
AD-A092 470/4 1414 PC A04/MF A01

NRL-MR-4371

Detailed Modelling of Combustion Systems.
AD-A092 234/4 1452 PC A11/MF A01

NRL-MR-4372

Results of the Solar Cell Experiments aboard the NTS-2 Satellite after 811 Days in Orbit.
AD-A092 438/1 1363 PC A03/MF A01

NRL-MR-4374

Performance of ANDVT HF Modem with Peak Clipping.
AD-A092 114/8 1408 PC A03/MF A01

NRL-MR-4387

NRL Light Ion Beam Research for Inertial Confinement Fusion.
AD-A092 471/2 1414 PC A03/MF A01

NRL-MR-4397

Beam Requirements for Light-Ion-Driven Inertial-Confinement Fusion.
AD-A092 472/0 1414 PC A02/MF A01

NRL-MR-4404

A New Method and Composition for Cleaning Metal Surfaces.
AD-A092 130/4 1373 PC A02/MF A01

NRL-MR-4406

Effect of Stress-Strain Behavior on Low-Cycle Fatigue of Alpha-Beta Titanium Alloys.
AD-A092 473/8 1370 PC A03/MF A01

NRL-REPRINT-1645

Reprint: The Thermoluminescence of CaF2:Mn.
AD-A950 101/6 1335 Not available NTIS

NRL-REPRINT-3862

Reprint: Anomalous Fading of CaF2:Mn Thermoluminescent Dosimeters.
AD-A950 102/4 1327 Not available NTIS

NRL-REPRINT-8078

Reprint: Analysis of Gas Dissociation Solar Thermal Power System.
AD-A091 982/9 1363 Not available NTIS

NRL-8261

A New Theory for Striations with Experimental Verifications.
AD-A092 058/7 1447 PC A07/MF A01

NRL-8372

Effective Shear Modulus for Flexural and Extensional Waves in an Unloaded Thick Plate.
AD-A092 149/4 1449 PC A04/MF A01

NRL-8418

Physical Limitations and Design Criteria for a Solid-State Gyrotron.
AD-A092 150/2 1351 PC A02/MF A01

NRL-8422

Atmospheric Transmission Measurements at White Sands Missile Range, August 1978.
AD-A092 445/6 1293 PC A04/MF A01

NRL-8430

Spatial Coherence Measurements and Evaluation of a Noise Reduction Technique for Ambient Noise from 0.3 to 40 Hz.
AD-A092 151/0 1411 PC A04/MF A01

NSF/PRA-7510163/1

Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.
PB81-125387 1300 PC A06/MF A01

NSF/PRA-7706495

Quality of Worklife Programs: A Preliminary Technology Assessment,
PB81-125379 1309 PC A15/MF A01

NSF/RA-790394

Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390 PC A05/MF A01

NSF/RA-790528

Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
PB81-122533 1393 PC A06/MF A01

NSF/RA-790547

Risk and Public Policy.
PB81-120057 1394 PC A04/MF A01

NSF/RA-800196

General Applicability of a Nonlinear Model of a One Story Steel Frame,
PB81-124877 1395 PC A06/MF A01

NSF/RA-800197

A Green-Function Method for Wave Interaction with a Submerged Body,
PB81-122269 1438 PC A07/MF A01

NSF/RA-800201

A Response Spectrum Method for Random Vibrations,
PB81-122301 1394 PC A03/MF A01

NSF/RA-800207

Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons,
PB81-120032 1350 PC A04/MF A01

NSF/RA-800208

Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
PB81-120065 1350 PC A04/MF A01

NSF/RA-800209

Cyclic Inelastic Buckling of Tubular Steel Braces,
PB81-124885 1395 PC A10/MF A01

NSF/RA-800215

Full-Scale Experimental Investigation of a Modern Earth Dam,
PB81-123788 1384 PC A10/MF A01

NSF/RA-800223

Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
PB81-132557 1317 PC A12/MF A01

NSF/RA-800246

Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980,
PB81-120081 1350 PC A13/MF A01

NSF/RA-800263

The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
PB81-122988 1299 PC A04/MF A01

NSF/RA-800270

National Resource Center Operational Feasibility and Use Study, Volume 1,
PB81-125304 1299 PC A04/MF A01

NSF/RA-800271

National Resource Center Operational Feasibility and Use Study, Volume 2, Appendix D,
PB81-125312 1299 PC A04/MF A01

NSF/RA-800291

Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
PB81-124000 1384 PC A13/MF A01

NSF/RA-800293

3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program,
PB81-123242 1449 PC A03/MF A01

NSMRL-888

The Effects of Earplugs and Earmuffs on Pitch Discrimination in Noise.
AD-B039 142/5 1326 PC A02/MF A01

NSWC/WOL/TR-76-43

A Characterization Study of Several Heat Resistant Explosives in Mild Detonating Cords.
AD-B015 229/8 1433 PC A04/MF A01

NUC-TP-303

Handbook of Underwater Imaging System Design.
AD-904 472/8 1409 PC A14/MF A01

NUREG/CR-1299

Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies,
NUREG/CR-1299 1337 PC A03/MF A01

NUREG/CR-1469-V-14

Light Water Reactor Safety Research Program. Volume 14.
NUREG/CR-1469-V-14 1428 PC A09/MF A01

NUREG/CR-1694

Properties of Radioactive Wastes and Waste Containers.
NUREG/CR-1694 1424 PC A03/MF A01

NUREG/CR-1761

A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
NUREG/CR-1761 1422 PC A03/MF A01

NUREG/CR-1819

Development and Testing of a Model for Fire Potential in Nuclear Power Plants.
NUREG/CR-1819 1422 PC A07/MF A01

NUREG-0619-REV-1

BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking: Resolution of Generic Technical Activity A-10.
NUREG-0619-REV-1 1428 PC A05/MF A01

NWC-TP-5174

Summary of Selected Worldwide Temperatures in Explosive Hazard Magazines.
AD-892 684/2 1433 PC A03/MF A01

NWC-TP-5835

Generic Ordnance Ramjet Engine (GORJE) Fuel Tank.
AD-B014 875/9 1455 PC A10/MF A01

NWC-TP-6005

Launch Opportunity for Air-to-Ground, Visually Delivered Weapons.
AD-B026 467/1 1403 PC A04/MF A01

NWC-TP-6010

Application of Statistical Fracture Criteria to the Problem of Predicting Infrared Dome Thermal Shock Failures.
AD-B028 668/2 1411 PC A04/MF A01

NWC-TP-6029

Design Study for a 100-Watt Turboalternator Power Unit.
AD-B029 195/5 1364 PC A03/MF A01

NWC-TP-6054

Laser Safety Computer Program.
AD-B032 525/8 1439 PC A03/MF A01

NWC-TP-6195

Coso Monitoring Program.
AD-A092 417/5 1343 PC A04/MF A01

NWC-TP-6202

Effect of Response Mode on Target Identification.
AD-A092 381/3 1412 PC A03/MF A01

NWC-TP-6211

Evaluation of RF Anechoic Chamber Fire Protection Systems.
AD-A092 478/7 1396 PC A08/MF A01

OACSFOR-OT-RD-4-68

Lessons Learned, 4-68. Communications and Electronics Lessons Learned.
AD-855 117/8 1403 PC A04/MF A01

OACSFOR-OT-UT-683151

Lessons Learned, Headquarters, 63D Signal Battalion.
AD-845 655/0 1403 PC A03/MF A01

OACSFOR-OT-UT-683362

Lessons Learned, Headquarters, Fort Buckner.
AD-845 654/3 1403 PC A02/MF A01

OACSFOR-OT-UT-691225

Lessons Learned, Headquarters, 36th Signal Battalion.
AD-861 033/9 1405 PC A02/MF A01

OACSFOR-OT-UT-691227

Lessons Learned, Headquarters, 972d Signal Battalion.
AD-858 938/4 1404 PC A02/MF A01

OACSFOR-OT-UT-691256

Lessons Learned, Headquarters, 160th Signal Group.
AD-857 482/4 1404 PC A02/MF A01

OACSFOR-OT-UT-692007

Lessons Learned, Headquarters, 64th Quartermaster Battalion.
AD-858 376/7 1404 PC A02/MF A01

OACSFOR-OT-UT-692016

Lessons Learned, Headquarters, 9th Logistical Command.

AD-860 216/1 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692016
Lessons Learned, Headquarters, Army Depot, Cam Ranh.
AD-859 337/8 1404 PC **A03**/MF **A01**

OACSFOR-OT-UT-692022
Lessons Learned, Headquarters, 24th Transportation Battalion (Terminal).
AD-859 381/6 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692039
Lessons Learned, Headquarters, 3D Battalion,506th Infantry.
AD-855 651/6 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692079
Lessons Learned, Headquarters, 588th Engineer Battalion.
AD-855 901/5 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692087
Lessons Learned, Headquarters, 84th Engineer Battalion.
AD-855 900/7 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692113
Lessons Learned, Headquarters, 93rd Engineer Battalion.
AD-855 273/9 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692117
Lessons Learned, Headquarters, 36th Engineer Battalion.
AD-855 322/4 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692141
Lessons Learned, Headquarters, 31st Engineer Battalion.
AD-856 079/9 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692143
Lessons Learned, Headquarters, 125th Transportation Command.
AD-859 256/0 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692173
Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
AD-859 530/8 1404 PC **A03**/MF **A01**

OACSFOR-OT-UT-692174
Lessons Learned, Headquarters, 864th Engineer Battalion (Construction).
AD-859 926/8 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692175
Lessons Learned, Headquarters, 70th Engineer Battalion.
AD-859 267/7 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692176
Lessons Learned, Headquarters, 116th Engineer Battalion.
AD-856 367/8 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692177
Lessons Learned, Headquarters, 34th General Support Group.
AD-856 914/7 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692178
Lessons Learned, Headquarters, 164th Aviation Group.
AD-855 356/2 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692185
Lessons Learned, Headquarters, I Corps Tactical Zone Signal Group.
AD-855 695/3 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692192
Lessons Learned, Headquarters, 41st Signal Battalion.
AD-860 678/2 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692194
Lessons Learned, Headquarters, 43d Signal Battalion.
AD-861 032/1 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692208
Lessons Learned, Headquarters, 52d Signal Battalion.
AD-861 474/5 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692214
Lessons Learned, Headquarters, US Army Regional Communications Group (Vietnam).
AD-861 495/0 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-692215
Lessons Learned, Headquarters, 35th Engineer Group (Construction).
AD-859 837/7 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692217
Lessons Learned, Headquarters, Da Nang Signal Battalion.
AD-860 083/5 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692218
Lessons Learned, Headquarters, 63rd Signal Battalion (Army).
AD-860 218/7 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692223
Lessons Learned, Headquarters, 124th Transportation Command (Terminal A).
AD-859 596/9 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692228
Lessons Learned, Headquarters, Phu Lam Signal Battalion.
AD-860 742/6 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692229
Lessons Learned. Headquarters, US Army STRATCOM Long Lines Battalion North.
AD-861 538/7 1406 PC **A03**/MF **A01**

OACSFOR-OT-UT-692230
Lessons Learned, Headquarters, USASTRATCOM Facility Nha Trang.
AD-860 348/2 1303 PC **A02**/MF **A01**

OACSFOR-OT-UT-692233
Lessons Learned, Headquarters, 29th Signal Group.
AD-861 521/3 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-692243
Lessons Learned, Headquarters, 165th Aviation Group.
AD-857 128/3 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692250
Lessons Learned, Headquarters, 40th Signal Battalion (Construction).
AD-861 633/6 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-692273
Lessons Learned, Headquarters, 14th Transportation Battalion.
AD-859 526/6 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692286
Lessons Learned, Headquarters, 815th Engineer Battalion (Construction).
AD-857 603/5 1404 PC**$7.00***

OACSFOR-OT-UT-692287
Lessons Learned, Headquarters, 299th Engineer Battalion.
AD-855 547/6 1403 PC **A03**/MF **A01**

OACSFOR-OT-UT-692288
Lessons Learned, Headquarters, 20th Engineer Battalion.
AD-856 118/5 1404 PC **A03**/MF **A01**

OACSFOR-OT-UT-692292
Lessons Learned, Headquarters, 184th Ordnance Battalion (Ammo).
AD-859 175/2 1404 PC **A03**/MF **A01**

OACSFOR-OT-UT-692297
Lessons Learned, Headquarters 4th Transportation Command.
AD-859 308/9 1404 PC **A03**/MF **A01**

OACSFOR-OT-UT-692301
Lessons Learned, Headquarters, U. S. Army Depot Long Binh.
AD-858 944/2 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692302
Lessons Learned, Headquarters, U. S. Army Depot, Qui Nhon.
AD-859 531/6 1404 PC **A03**/MF **A01**

OACSFOR-OT-UT-692319
Lessons Learned, Headquarters, 169th Engineer Battalion.
AD-855 561/7 1403 PC **A02**/MF **A01**

OACSFOR-OT-UT-692320
Lessons Learned, Headquarters, 577th Engineer Battalion.
AD-856 164/9 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692330
Lessons Learned, Headquarters, 46th Engineer Battalion.
AD-856 713/3 1404 PC **A03**/MF **A01**

OACSFOR-OT-UT-692331
Lessons Learned, Headquarters, 92nd Engineer Battalion.
AD-857 032/7 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692342
Lessons Learned, Headquarters, 79th Engineer Group, (Construction).
AD-859 379/0 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692348
Lessons Learned Review of the HQ USEUCOM Command Center Project.
AD-856 745/5 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692349
Lessons Learned, Headquarters 507th Transportation Group (Movement Control).
AD-859 903/7 1405 PC**$7.00***

OACSFOR-OT-UT-692351
Lessons Learned, Headquarters, 538th Engineer Battalion.
AD-859 909/4 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-692352
Lessons Learned, Headquarters, 394th Transportation Battalion.
AD-858 543/2 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692353
Lessons Learned, Headquarters, 2d Logistical Command.
AD-859 278/4 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692354
Lessons Learned, Headquarters, 809th Engineer Battalion (Construction).
AD-859 333/7 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-692355
Lessons Learned, Headquarters 44th Engineer Group (Construction).
AD-859 902/9 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693007
Lessons Learned, Headquarters, United States Army, Pacific.
AD-858 945/9 1404 PC **A02**/MF **A01**

OACSFOR-OT-UT-693017
Lessons Learned, Headquarters, 29th Civil Affairs Company.
AD-861 834/0 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693036
Lessons Learned, Headquarters, 84th Engineer Battalion.
AD-860 632/9 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693041
Lessons Learned, Headquarters, 3d Field Hospital.
AD-861 494/3 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693042
Lessons Learned, Headquarters, 3d Surgical Hospital.
AD-861 493/5 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693045
Lessons Learned, Headquarters, 29th Evacuation Hospital.
AD-861 512/2 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693050
Lessons Learned, Headquarters, 538th Engineer Battalion.
AD-861 827/4 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693052
Lessons Learned, Headquarters, 35th Engineer Battalion.
AD-860 347/4 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693055
Lessons Learned, Headquarters, 86th Engineer Battalion.
AD-861 777/1 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693070
Lessons Learned, Headquarters, 20th Engineer Battalion.
AD-860 344/1 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693080
Lessons Learned, Headquarters, 519th Transportation Battalion.
AD-861 828/2 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693110
Lessons Learned. Headquarters, 19th Engineer Battalion (Combat).
AD-861 529/6 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693113
Lessons Learned. Headquarters, 27th Engineer Battalion (Combat).
AD-861 530/4 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693120
Lessons Learned, Headquarters, 45th Surgical Hospital.
AD-861 505/6 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693145
Lessons Learned, Headquarters, 70th Engineer Battalion.
AD-861 634/4 1406 PC **A03**/MF **A01**

OACSFOR-OT-UT-693148
Lessons Learned, Headquarters, 589th Engineer Battalion (Construction).
AD-861 636/9 1406 PC **A03**/MF **A01**

OACSFOR-OT-UT-693180
Lessons Learned, Headquarters, 41st Civil Affairs Company.
AD-861 915/7 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693182
Lessons Learned. Headquarters, 12th Signal Group.
AD-861 531/2 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693187
Lessons Learned, Headquarters, U. S. Army Headquarters Area Command.
AD-859 944/1 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693188
Lessons Learned, Headquarters, 44th Medical Brigade.
AD-860 217/9 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693210
Lessons Learned. Headquarters, 2nd Civil Affairs Company.
AD-861 532/0 1406 PC **A02**/MF **A01**

OACSFOR-OT-UT-693254
Lessons Learned, Headquarters, 34th Engineer Battalion.
AD-860 346/6 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693257
Lessons Learned, Headquarters, 165th Aviation Group.
AD-861 029/7 1405 PC **A03**/MF **A01**

OACSFOR-OT-UT-693258
Lessons Learned, Headquarters, 68th Medical Group.
AD-860 461/3 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693278
Lessons Learned, Headquarters, 31st Engineer Battalion.
AD-860 345/8 1405 PC **A02**/MF **A01**

OACSFOR-OT-UT-693285
Lessons Learned, Headquarters, 62d Engineer Battalion.

AD-861 030/5 1405 PC A02/MF A01

OACSFOR-OT-UT-693286

Lessons Learned, Headquarters, 34th Engineer Group.
AD-861 031/3 1405 PC A02/MF A01

OACSFOR-OT-UT-693297

Lessons Learned, Headquarters, 1st Signal Brigade (USASTRATCOM).
AD-861 496/8 1406 PC A03/MF A01

OACSFOR-OT-UT-693313

Lessons Learned, Headquarters, 169th Engineer Battalion.
AD-861 670/8 1406 PC A03/MF A01

OASN(M/RA/L)-RR-37

EEO External Relevant Labor Force Analysis.
AD-A092 242/7 1300 PC A05/MF A01

OC-R-80-0002AB-1

Practical Control Algorithms for Nonlinear Stochastic Systems and Investigations of Nonlinear Filters.
AD-A092 199/9 1376 PC A07/MF A01

OEHL-79-149

Control, Decontamination and Disposal of Mercury.
AD-A092 453/0 1328 PC A03/MF A01

OEHL-80-35

The Effects of Water Temperature on Decontamination of Pesticide Applicator Clothing.
AD-A091 934/0 1326 PC A02/MF A01

ONWI/SUB-80/E511-01200-7

Fission Product Release. Progress Report, April 1-June 30, 1980.
LA-8539-PR 1424 PC A02/MF A01

ORNL/CSD-53

SACRD: A Data Base for Fast Reactor Safety Computer Codes, Operational Procedures.
ORNL/CSD-53 1428 PC A06/MF A01

ORNL/CSD-66

Composition of Solidified Binary Alloy from a Simple Solidification Model.
ORNL/CSD-66 1371 PC A02/MF A01

ORNL/EIS-85

Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322 PC A20/MF A01

ORNL/EIS-130

Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323 PC A21/MF A01

ORNL/EIS-156/V1

Selected, Annotated Bibliography of Studies Relevant to the Isolation of Nuclear Wastes.
ORNL/EIS-156/V1 1424 PC A20/MF A01

ORNL/NUREG/TM-396

A Survey of Proposed Functional Requirements for a Disturbance Analysis and Surveillance System,
NUREG/CR-1761 1422 PC A03/MF A01

ORNL/SUB-7496/1

Safety Analysis of B and W Standard PWR Using Thorium-Based Fuels.
ORNL/SUB-7496/1 1430 PC A10/MF A01

ORNL/TM-7122

R And D Needs Assessment for the Engineering Test Facility.
ORNL/TM-7122 1417 PC A10/MF A01

ORNL/TM-7124(DR)

Deuterium and Tritium Fueling in an ETF/INTOR Plasma with Divertor.
ORNL/TM-7124(DR) 1417 PC A03/MF A01

ORNL/TM-7341

GLUCS: A Generalized Least-Squares Program for Updating Cross Section Evaluations with Correlated Data Sets.
ORNL/TM-7341 1446 PC A09/MF A01

ORNL/TM-7452

ISX-B Neutral Beams and the Beam Target Experiment.
ORNL/TM-7452 1418 PC A04/MF A01

ORNL/TM-7483

Fossil Energy Program. Progress Report, July 1980.
ORNL/TM-7483 1362 PC A06/MF A01

ORNL/TM-7503

Currents Induced in Tokamaks by Electron Cyclotron Heating.
ORNL/TM-7503 1418 PC A03/MF A01

ORNL-5462

Radiological Survey of the Inactive Uranium-Mill Tailings at Falls City, Texas.
ORNL-5462 1426 PC A04/MF A01

ORNL-5567

FEMWATER: A Finite-Element Model of Water Flow Through Saturated-Unsaturated Porous Media.
ORNL-5567 1343 PC A08/MF A01

ORNL-5671

Fossil Energy Program. Quarterly Progress Report for the Period Ending June 30, 1980.
ORNL-5671 1362 PC A19/MF A01

ORNL-5673

Development of Joining Techniques for Fabrication of Fuel Rod Simulators.
ORNL-5673 1430 PC A03/MF A01

ORO-5135-77/7

Effects of Flow Curvature on the Aerodynamics of Darrieus Wind Turbines.
ORO-5135-77/7 1362 PC A06/MF A01

OSU-CISRC-TR-80-8

Design and Analysis of Relational Join Operations of a Database Computer (DBC).
AD-A092 230/2 1355 PC A05/MF A01

OU-AMNE-80-17

Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368 PC A02/MF A01

OU-AMNE-80-20

Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368 PC A03/MF A01

OWRT-A-046-UTAH(1)

Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344 PC A05/MF A01

OWRT-A-048-MD

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329 PC A05/MF A01

OWRT-A-070-RI(1)

Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385 PC A03/MF A01

OWRT-A-071-RI(1)

UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385 PC A02/MF A01

OWRT-A-077-CAL(1)

A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
PB81-140683 1387 PC A04/MF A01

OWRT-A-081-OKLA(1)

Investigation of Factors Affecting Energy for Irrigation Pumping.
PB81-127557 1291 PC A02/MF A01

OWRT-A-081-VA(1)

Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
PB81-127391 1385 PC A06/MF A01

OWRT-A-092-OKLA(1)

Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
PB81-124158 1384 PC A03/MF A01

OWRT-A-999-NC(53)

Water Resources in North Carolina.
PB81-127318 1343 PC A04/MF A01

OWRT-B-038-NEV(4)

Basin Development and Water Allocation,
PB81-127276 1343 PC A04/MF A01

OWRT-B-052-SDAK(1)

A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291 PC A05/MF A01

OWRT-B-094-IND(4)

Green River Basin Flow Forecasting Models.
PB81-124448 1343 PC A10/MF A01

OWRT-B-128-MINN(1)

A Trophic Classification of Minnesota Lakes Based on Lake Sediments.
PB81-124141 1343 PC A02/MF A01

OWRT-C-80093-P(8403)(2)

The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387 PC A07/MF A01

OWRT-C-80093-P(8403)(3)

The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-138141 1387 PC A10/MF A01

OWRT-C-80093-P(8403)(4)

The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
PB81-138158 1387 PC A12/MF A01

OWRT-C-80093-P(8403)(5)

The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
PB81-138166 1387 PC A05/MF A01

OWRT-C-80093-P(8493)(1)

The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387 PC A04/MF A01

OWRT-C-90005-S(9504)(1)

Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385 PC A04/MF A01

OWRT-W-525

The Influence of River Water Quality on Storage Reservoir Management.
PB81-128688 1344 PC A02/MF A01

P-1365

Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400 PC A03/MF A01

PAS-76-8

Handbook of Electrical Insulating Materials for Deep Ocean Applications,
AD-B012 737/3 1352 PC A05/MF A01

PAT-APPL-6-005 885

Radar Sensitivity Time Control Using Range Gated Feedback.
PATENT-4 228 435 1413 Not available NTIS

PAT-APPL-6-015 675

Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455 Not available NTIS

PAT-APPL-6-018 696

Clutch Protection Circuit.
PATENT-4 227 232 1361 Not available NTIS

PAT-APPL-6-019 792

Non-Fouling Print Stylus.
PATENT-4 206 466 1399 Not available NTIS

PAT-APPL-6-024 827

Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353 Not available NTIS

PAT-APPL-6-025 157

Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331 PC A02/MF A01

PAT-APPL-6-025 413

High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361 Not available NTIS

PAT-APPL-6-025 982

Connector-to-Connector Adaptor.
PATENT-4 218 110 1352 Not available NTIS

PAT-APPL-6-027 696

Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332 Not available NTIS

PAT-APPL-6-031 706

Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368 Not available NTIS

PAT-APPL-6-046 898

Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332 Not available NTIS

PAT-APPL-6-048 322

Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369 Not available NTIS

PAT-APPL-6-057 858

Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369 Not available NTIS

PAT-APPL-6-058 177

Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332 Not available NTIS

PAT-APPL-6-061 169

Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332 Not available NTIS

PAT-APPL-6-069 476

Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332 Not available NTIS

PAT-APPL-6-100 663

Slurry Atomizer for a Coal-Feeder and Dryer Used to Provide Coal at Gasifier Pressure.
PAT-APPL-6-100 663 1331 PC A02/MF A01

PAT-APPL-6-101 364

Preparation of Grout for Stablization of Abandoned In-situ Oil Shale Retorts.
PAT-APPL-6-101 364 1383 PC A02/MF A01

PAT-APPL-6-101 370

Apparatus for Installing Condition-Sensing Means in Subterranean Earth Formations.
PAT-APPL-6-101 370 1396 PC A02/MF A01

PAT-APPL-6-105 079

Toluidine Blue Rinse for the Detection of Squamous Carcinoma of the Oral Cavity and Other Structures Composition and Method.
PAT-APPL-6-105 079 1325 PC A02/MF A01

PAT-APPL-6-106 203

Submergible Barge Retrievable Storage and Permanent Disposal System for Radioactive Waste.
PAT-APPL-6-106 203 1424 PC A02/MF A01

PAT-APPL-6-107 792

Method of Lining a Vertical Mine Shaft with Concrete.
PAT-APPL-6-107 792 1347 PC A02/MF A01

PAT-APPL-6-110 045

Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325 PC A02/MF A01

PAT-APPL-6-110 293

Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325 PC A02/MF A01

PAT-APPL-6-110 738

Improved Electrostatic Coalescense System with Independent AC and DC Hydrophilic Electrodes.
PAT-APPL-6-110 738 1337 PC A02/MF A01

NTIS ORDER/REPORT NUMBER INDEX

PAT-APPL-6-111 495
Method for Improving Dissolution Efficiency in Gas-Absorption and Liquid Extraction Processes.
PAT-APPL-6-111 495 1337 PC **A02**/MF **A01**

PAT-APPL-6-115 411
Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331 PC **A02**/MF **A01**

PAT-APPL-6-115 900
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338 PC **A03**/MF **A01**

PAT-APPL-6-119 738
Thermochemical Generation of Hydrogen and Oxygen from Water.
PAT-APPL-6-119 738 1454 PC **A02**/MF **A01**

PAT-APPL-6-124 057
Two Stage Liquefaction of Coal.
PAT-APPL-6-124 057 1331 PC **A02**/MF **A01**

PAT-APPL-6-133 788
Improved Synthesis of 2,4-Diamino-6-Hydroxymethylpteridine.
PAT-APPL-6-133 788 1332 PC **A02**/MF **A01**

PAT-APPL-6-143 129
Separation of Triphenylphosphine Oxide from Methotrexate Ester and Purification of Said Ester.
PAT-APPL-6-143 129 1338 PC **A02**/MF **A01**

PAT-APPL-6-150 320
Inactivation on Non-A, Non-B Hepatitis Agent.
PAT-APPL-6-150 320 1325 PC **A02**/MF **A01**

PAT-APPL-6-157 380
Blood Gas Analyzer System.
PAT-APPL-6-157 380 1324 PC **A03**/MF **A01**

PAT-APPL-6-163 952
Intracranial Pressure Monitoring Device.
PAT-APPL-6-163 952 1324 PC **A02**/MF **A01**

PAT-APPL-6-170 570
Water Soluble Forms of Retinoids.
PAT-APPL-6-170 570 1332 PC **A02**/MF **A01**

PAT-APPL-6-171 611
Flow-Closing Bleed Valve Assembly.
PAT-APPL-6-171 611 1455 PC **A02**/MF **A01**

PAT-APPL-6-172 086
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
PAT-APPL-6-172 086 1325 PC **A02**/MF **A01**

PAT-APPL-6-174 239
Electric Gel Slicer.
PAT-APPL-6-174 239 1396 PC **A02**/MF **A01**

PAT-APPL-6-175 594
Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 594 1325 PC **A02**/MF **A01**

PAT-APPL-6-180 542
Improving the Removal of Lint from Cottonseed.
PAT-APPL-6-180 542 1390 PC **A02**/MF **A01**

PAT-APPL-6-180 544
Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369 PC **A02**/MF **A01**

PAT-APPL-6-180 546
Solubilization of Lignocelluiosic Materials.
PAT-APPL-6-180 546 1338 PC **A02**/MF **A01**

PAT-APPL-6-181 465
Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
PAT-APPL-6-181 465 1332 PC **A02**/MF **A01**

PAT-APPL-6-181 924
Taggants with Explosive Induced Magnetic Susceptibility.
PAT-APPL-6-181 924 1433 PC **A02**/MF **A01**

PAT-APPL-6-181 940
Multi-Tone Jammer.
PAT-APPL-6-181 940 1410 PC **A02**/MF **A01**

PAT-APPL-6-182 562
Perfluorocompounds.
PAT-APPL-6-182 562 1374 PC **A02**/MF **A01**

PAT-APPL-6-182 563
Perfluorinated Epoxides.
PAT-APPL-6-182 563 1374 PC **A02**/MF **A01**

PAT-APPL-6-182 564
Perfluorocarbon Ethers.
PAT-APPL-6-182 564 1374 PC **A02**/MF **A01**

PAT-APPL-6-185 469
A Netted Search Radar System.
PAT-APPL-6-185 469 1413 PC **A02**/MF **A01**

PAT-APPL-6-185 471
P+ N Gallium Phosphide Photodiodes.
PAT-APPL-6-185 471 1352 PC **A02**/MF **A01**

PAT-APPL-6-185 472
Automatic Bandwidth Control System.
PAT-APPL-6-185 472 1412 PC **A02**/MF **A01**

PAT-APPL-6-185 473
Improved Film Cooled Annular Combustor.
PAT-APPL-6-185 473 1455 PC **A02**/MF **A01**

PAT-APPL-6-186 381
Contrast Resolution Tissue-Equivalent Ultrasound Test Object.
PAT-APPL-6-186 381 1324 PC **A02**/MF **A01**

PAT-APPL-6-187 380
Apparatus for Removing Corn from Cob.
PAT-APPL-6-187 380 1323 PC **A02**/MF **A01**

PAT-APPL-6-187 646
Fuel Valve.
PAT-APPL-6-187 646 1455 PC **A02**/MF **A01**

PAT-APPL-6-189 237
Power Circuit Utilizing Self Excited Hall Effect Switch Means.
PAT-APPL-6-189 237 1361 PC **A02**/MF **A01**

PAT-APPL-6-190 064
N-Acetyl-Cysteine Protects Against Cardiac Damage from Subsequently-Administered Cardio-Toxic Anthracycline in Cancer Therapy.
PAT-APPL-6-190 064 1326 PC **A02**/MF **A01**

PAT-APPL-6-195 188
Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
PAT-APPL-6-195 188 1396 PC **A02**/MF **A01**

PAT-APPL-157 299
Chemical Agent Detection Method and Apparatus.
PATENT-4 225 316 1399 Not available NTIS

PAT-APPL-568 681
Long Range Listening System.
PATENT-4 223 311 1410 Not available NTIS

PAT-APPL-666 533
Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391 Not available NTIS

PAT-APPL-784 488
Crosslinked Crystalline Polymer and Methods for Cooling and Heating.
PATENT-4 182 398 1338 Not available NTIS

PAT-APPL-866 143
Offset Correction Apparatus for a Successive Approximation A/D Converter.
PATENT-4 228 423 1361 Not available NTIS

PAT-APPL-916 988
Granulation and Coating by Improved Method of Heat Removal.
PATENT-4 213 924 1390 Not available NTIS

PAT-APPL-924 101
Reverse Velocity Rotor System for Rotorcraft.
PATENT-4 227 856 1289 Not available NTIS

PAT-APPL-927 234
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332 Not available NTIS

PAT-APPL-928 218
Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361 Not available NTIS

PAT-APPL-943 894
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361 Not available NTIS

PAT-APPL-954 218
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326 Not available NTIS

PAT-APPL-966 329
Horizontal Flow-Through Coil Planet Centrifuge.
PATENT-4 228 950 1396 Not available NTIS

PAT-APPL-967 749
Surface Acoustic Signal Defader.
PATENT-4 219 888 1437 Not available NTIS

PAT-APPL-972 124
Acoustical Deverberator.
PATENT-4 225 954 1407 Not available NTIS

PATENT-4 162 813
Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmospheres.
PATENT-4 162 813 1391 Not available NTIS

PATENT-4 181 654
2,3-Dihydroxybenzoic Acid Amides of Tetraazaalkanes and Tetraaza Cycloalkanes.
PATENT-4 181 654 1332 Not available NTIS

PATENT-4 182 398
Crosslinked Crystalline Polymer and Methods for Cooling and Heating.
PATENT-4 182 398 1338 Not available NTIS

PATENT-4 206 466
Non-Fouling Print Stylus.
PATENT-4 206 466 1399 Not available NTIS

PATENT-4 213 924
Granulation and Coating by Improved Method of Heat Removal.
PATENT-4 213 924 1390 Not available NTIS

PATENT-4 218 110
Connector-to-Connector Adaptor.
PATENT-4 218 110 1352 Not available NTIS

PATENT-4 219 888
Surface Acoustic Signal Defader.
PATENT-4 219 888 1437 Not available NTIS

PATENT-4 222 968
Method for Synthesizing Fluorocarbon Halides.
PATENT-4 222 968 1332 Not available NTIS

PATENT-4 223 311
Long Range Listening System.
PATENT-4 223 311 1410 Not available NTIS

PATENT-4 224 576
Gyrotron Travelling-Wave Amplifier.
PATENT-4 224 576 1361 Not available NTIS

PATENT-4 225 316
Chemical Agent Detection Method and Apparatus.
PATENT-4 225 316 1399 Not available NTIS

PATENT-4 225 512
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332 Not available NTIS

PATENT-4 225 954
Acoustical Deverberator.
PATENT-4 225 954 1407 Not available NTIS

PATENT-4 226 800
Synthesis of Acetylene-Terminated Compounds.
PATENT-4 226 800 1369 Not available NTIS

PATENT-4 227 111
Flexible Piezoelectric Composite Transducers.
PATENT-4 227 111 1353 Not available NTIS

PATENT-4 227 153
Pulse Generator Utilizing Superconducting Apparatus.
PATENT-4 227 153 1361 Not available NTIS

PATENT-4 227 187
High Speed Real Time Quantizer and Analog/Digital Converter.
PATENT-4 227 187 1361 Not available NTIS

PATENT-4 227 232
Clutch Protection Circuit.
PATENT-4 227 232 1361 Not available NTIS

PATENT-4 227 856
Reverse Velocity Rotor System for Rotorcraft.
PATENT-4 227 856 1289 Not available NTIS

PATENT-4 228 100
Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332 Not available NTIS

PATENT-4 228 423
Offset Correction Apparatus for a Successive Approximation A/D Converter.
PATENT-4 228 423 1361 Not available NTIS

PATENT-4 228 435
Radar Sensitivity Time Control Using Range Gated Feedback.
PATENT-4 228 435 1413 Not available NTIS

PATENT-4 228 753
Fluidic Controlled Diffusers for Turbopumps.
PATENT-4 228 753 1455 Not available NTIS

PATENT-4 228 950
Horizontal Flow-Through Coil Planet Centrifuge.
PATENT-4 228 950 1396 Not available NTIS

PATENT-4 229 566
Articulated Para-Ordered Aromatic Heterocyclic Polymers Containing Diphenoxybenzene Structures.
PATENT-4 229 566 1332 Not available NTIS

PATENT-4 231 747
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369 Not available NTIS

PATENT-4 232 154
Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332 Not available NTIS

PATENT-4 233 107
Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368 Not available NTIS

PATENT-4 233 215
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326 Not available NTIS

PB81-116642
Ultra-Black Coating Due to Surface Morphology.
PATENT-4 233 107 1368 Not available NTIS

PB81-116667
Granulation and Coating by Improved Method of Heat Removal.
PATENT-4 213 924 1390 Not available NTIS

PB81-119844
Reprint: Space Applications of Superconductivity: Resonators for High Stability Oscillators and Other Applications.
PB81-119844 1353 Not available NTIS

PB81-119851
Reprint: Thermal Effects in Sharp-Particle Contact.
PB81-119851 1367 Not available NTIS

PB81-120032
Nonlinear Hyperelastic (Green) Constitutive Models for Soils. Part I: Theory and Calibration. Part II: Predictions and Comparisons.
PB81-120032 1350 PC **A04**/MF **A01**

PB81-120057
Risk and Public Policy.

PB81-120057 1394 PC **A04**/MF **A01**

PB81-120065
Plasticity Models for Soils. Part I: Theory and Calibration. Part II: Comparison and Discussion,
PB81-120065 1350 PC **A04**/MF **A01**

PB81-120081
Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980,
PB81-120081 1350 PC **A13**/MF **A01**

PB81-120149
The Detailed Input-Output Structure of the U.S. Economy: 1972. Volume II. Total Requirements for Commodities and Industries, 1972. Part I. Commodity-by-Commodity Total Requirements, 1972. Part II. Industry-by-Commodity Total Requirements, 1972.
PB81-120149 1300 PC **A12**/MF **A01**

PB81-120172
The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
PB81-120172 1388 PC **A05**/MF **A01**

PB81-120206
Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433 PC **A03**/MF **A01**

PB81-120222
Results from Trials of a New Yawsonde Design.
PB81-120222 1434 PC **A02**/MF **A01**

PB81-120685
Reprint: Environmental Factors Affecting Smoltification and Early Marine Survival of Anadromous Salmonids,
PB81-120685 1340
(Order as PB81-120677, PC **A03**/MF **A01**)

PB81-120693
Reprint: The Efficiency of Mollies, 'Poecilia mexicana', as Live Bait for Pole-and-Line Skipjack Fishing: Fishing Trials in the Tropical Central Pacific,
PB81-120693 1316
(Order as PB81-120677, PC **A03**/MF **A01**)

PB81-120701
Reprint: Evaluation of a Bypass System for Juvenile Salmonids at Little Goose Dam,
PB81-120701 1340
(Order as PB81-120677, PC **A03**/MF **A01**)

PB81-120719
Reprint: Recent Observations of a Large Eddy in the Gulf of Alaska,
PB81-120719 1342
(Order as PB81-120677, PC **A03**/MF **A01**)

PB81-120727
Reprint: Instrument for Determining Depth of Dehydration of Frozen Fish,
PB81-120727 1323
(Order as PB81-120677, PC **A03**/MF **A01**)

PB81-120743
Reprint: Implications of Transplantations to Aquaculture and Ecosystems,
PB81-120743 1316
(Order as PB81-120735, PC **A03**/MF **A01**)

PB81-120750
Reprint: The Snail Resource of the Eastern Bering Sea and Its Fishery,
PB81-120750 1317
(Order as PB81-120735, PC **A03**/MF **A01**)

PB81-120768
Reprint: Groundfish Monitoring in Sponge-Coral Areas Off the Southeastern United States,
PB81-120768 1317
(Order as PB81-120735, PC **A03**/MF **A01**)

PB81-120784
Modified Factor Analysis of Selected RAPS (Regional Air Pollution Study) Aerosol Data.
PB81-120784 1383 PC **A05**/MF **A01**

PB81-121006
Reprint: Evaluation of High Efficiency CsI and CuI Photocathodes for Soft X-Ray Diagnostic.
PB81-121006 1353 Not available NTIS

PB81-121154
Metal Particulate Emissions from Stationary Sources. Volume 2. Characterization of Collection Filters.
PB81-121154 1383 PC **A04**/MF **A01**

PB81-121253
Indiana Five-Year Water Resources Research and Development Plan. Fiscal Years 1982-1986.
PB81-121253 1383 PC **A07**/MF **A01**

PB81-121493
Reprint: Effect of Particle Impact Angle on Strength Degradation of Glass.
PB81-121493 1368 Not available NTIS

PB81-121501
Reprint: The Tantalum-Palladium Constitution Diagram.
PB81-121501 1372 Not available NTIS

PB81-121527
Reprint: Strength Degradation of Glass Impacted with Sharp Particles: I, Annealed Surfaces.
PB81-121527 1368 Not available NTIS

PB81-121543
Reprint: Plastic Deformation of Fine-Grained Alumina (Al_2O_3): II, Basal Slip and Nonaccommodated Grain-Boundary Sliding,
PB81-121543 1368 Not available NTIS

PB81-121824
Reprint: Units, Physical,
PB81-121824 1396 Not available NTIS

PB81-121865
Slow Strain-Rate Stress Corrosion Testing of Aluminum Alloys,
PB81-121865 1372 Not available NTIS

PB81-122004
The Effects of Emission Control System Malfunctions or Maladjustments on Exhaust Emissions.
PB81-122004 1389 PC **A02**/MF **A01**

PB81-122269
A Green-Function Method for Wave Interaction with a Submerged Body,
PB81-122269 1438 PC **A07**/MF **A01**

PB81-122301
A Response Spectrum Method for Random Vibrations,
PB81-122301 1394 PC **A03**/MF **A01**

PB81-122343
Hydrodynamic Pressure and Added Mass for Axisymmetric Bodies,
PB81-122343 1438 PC **A08**/MF **A01**

PB81-122509
Dimensional Co-ordination in Building (Comhordu Toiseach.san bhFoirgniocht).
PB81-122509 1394 PC **A05**/MF **A01**

PB81-122533
Effect of Local Inhomogeneity on the Dynamic Response of Pipelines.
PB81-122533 1393 PC **A06**/MF **A01**

PB81-122707
Reprint: Developments in Particulate Control for Coal-Fired Power Plants.
PB81-122707 1383 PC **A04**/MF **A01**

PB81-122715
Reprint: Charge Measurements on Individual Particles Exiting Laboratory Precipitators with Positive and Negative Corona at Various Temperatures.
PB81-122715 1338 Not available NTIS

PB81-122723
Reprint: Measured Fine Particle Collection Characteristics of Four Novel Scrubbers.
PB81-122723 1384 Not available NTIS

PB81-122731
Reprint: Effects of Halogenated Organic Compounds on Photosynthesis in Estuarine Phytoplankton.
PB81-122731 1329 PC **A02**/MF **A01**

PB81-122749
Reprint: Kepone Effects on Larval Development of Mud-Crab and Blue-Crab.
PB81-122749 1329 Naot available NTIS

PB81-122863
Deformation Limits for Roofs and Walls of Profiled Sheeting--Translation.
PB81-122863 1394 PC **A03**/MF **A01**

PB81-122871
Optimal Distribution of Thermal Insulation and Ground Heat Losses,
PB81-122871 1395 PC **A05**/MF **A01**

PB81-122962
Clinical Field Trial to Assess the Cost-Effectiveness of Various Caries Preventive Agents.
PB81-122962 1320 PC **A09**/MF **A01**

PB81-122988
The Energy Link Catalog. Volume 1: Guide to Federal Energy Research,
PB81-122988 1299 PC **A04**/MF **A01**

PB81-122996
Comparison of Gas Phase Hydrocarbon Emissions from Light-Duty Gasoline Vehicles and Light-Duty Vehicles Equipped with Diesel Engines.
PB81-122996 1389 PC **A03**/MF **A01**

PB81-123028
Results of Sulfate Tests on Prototype Vehicles.
PB81-123028 1389 PC **A03**/MF **A01**

PB81-123069
Seismic Stability Evaluation of Earth Structures.
PB81-123069 1351 PC **A07**/MF **A01**

PB81-123242
3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program,
PB81-123242 1449 PC **A03**/MF **A01**

PB81-123424
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume I.
PB81-123424 1306 PC **A15**/MF **A01**

PB81-123432
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Staffing Methodologies. Volume II.
PB81-123432 1306 PC **A16**/MF **A01**

PB81-123440
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System.
PB81-123440 1306 PC **A19**/MF **A01**

PB81-123457
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. Systems Users Manual.
PB81-123457 1306 PC **A04**/MF **A01**

PB81-123465
A Study to Test and Analyze a Manpower Resource Management System for the Veterans Administration Health System. Final Report. System Operations Manual.
PB81-123465 1306 PC **A08**/MF **A01**

PB81-123499
Testing Support for Evaluation of Inspection/Maintenance Issues (Test Group Nos. 6 and 8).
PB81-123499 1389 PC **A03**/MF **A01**

PB81-123523
Propagation of Traffic Noise.
PB81-123523 1389 PC **A05**/MF **A01**

PB81-123549
The Investigation of Grain Elevator Explosions.
PB81-123549 1291 PC **A02**/MF **A01**

PB81-123705
Precast Repair of Continuously Reinforced Concrete Pavement.
PB81-123705 1384 PC **A13**/MF **A01**

PB81-123713
A Demographic Profile of Minimum Wage Workers, Working Paper Number 4,
PB81-123713 1307 PC **A04**/MF **A01**

PB81-123788
Full-Scale Experimental Investigation of a Modern Earth Dam,
PB81-123788 1384 PC **A10**/MF **A01**

PB81-123846
Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388 PC **A05**/MF **A01**

PB81-123879
Evaluation of Alternative Interment Methods for National Cemeteries.
PB81-123879 1309 PC **A09**/MF **A01**

PB81-124000
Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
PB81-124000 1384 PC **A13**/MF **A01**

PB81-124109
Cadmium Seminar 1980, Proceedings Held at the Lake Palace Hotel, Udaipur on 26 February 1980.
PB81-124109 1372 PC **A08**/MF **A01**

PB81-124141
A Trophic Classification of Minnesota Lakes Based on Lake Sediments.
PB81-124141 1343 PC **A02**/MF **A01**

PB81-124158
Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
PB81-124158 1384 PC **A03**/MF **A01**

PB81-124398
Business America - The Journal of International Trade, Volume 3, Number 24, December 1, 1980.
PB81-124398 1300 MF **A01**

PB81-124448
Green River Basin Flow Forecasting Models.
PB81-124448 1343 PC **A10**/MF **A01**

PB81-124521
Study of Liability, Insurance and Indemnification Problems for FRA Programs.
PB81-124521 1300 PC **A15**/MF **A01**

PB81-124620
Light Rail Application and Design,
PB81-124620 1384 PC **A10**/MF **A01**

PB81-124638
Wildlife Research Report. Part One.
PB81-124638 1384 PC **A09**/MF **A01**

PB81-124679
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394 PC **A20**/MF **A01**

PB81-124687
Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program. Phase I Report: Final Design Report and Report of Pilot Study Analysis.
PB81-124687 1320 PC **A14**/MF **A01**

PB81-124851
The Effectiveness of Horizontal Drains.
PB81-124851 1384 PC **A05**/MF **A01**

PB81-124869
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389 PC **A03**/MF **A01**

PB81-124877
General Applicability of a Nonlinear Model of a One Story Steel Frame,

NTIS ORDER/REPORT NUMBER INDEX

PB81-124877 1395 PC **A06**/MF **A01**

PB81-124885

Cyclic Inelastic Buckling of Tubular Steel Braces,
PB81-124885 1395 PC **A10**/MF **A01**

PB81-124984

Ultrasonic Materials Characterization.
PB81-124984 1396 PC **A99**/MF **A01**

PB81-125015

Polynuclear Aromatic Compounds. Synthesis and Purification.
PB81-125015 1332 PC **A05**/MF **A01**

PB81-125171

Kwalitatieve en Kwantitatieve Bepaling van Asbest Met Behulp van Elektronenmicroscopie (Determination of Asbestos. Qualitative and Quantitative Determination of Asbestos with the Use of an Electron Microscope),
PB81-125171 1338 PC **A02**/MF **A01**

PB81-125189

Een Gaschromatografische Bepalingsmethode voor Koolmonoxide en Methaan (A Gas Chromatographic Determination Method for Carbon Monoxide and Methane),
PB81-125189 1338 PC **A02**/MF **A01**

PB81-125197

Warmtebesparing door Isolatie en Stookwijze Bereikt in Twee Woningen-Woning II (Heat Savings by Insulation and Usage of the Heating System Achieved in Two Houses),
PB81-125197 1363 PC **A03**/MF **A01**

PB81-125304

National Resource Center Operational Feasibility and Use Study, Volume 1,
PB81-125304 1299 PC **A04**/MF **A01**

PB81-125312

National Resource Center Operational Feasibility and Use Study, Volume 2, Appendix D.
PB81-125312 1299 PC **A04**/MF **A01**

PB81-125379

Quality of Worklife Programs: A Preliminary Technology Assessment,
PB81-125379 1309 PC **A15**/MF **A01**

PB81-125387

Studies of the Relationship Between International Technology Transfer and R and D Expenditures by U.S. Firms.
PB81-125387 1300 PC **A06**/MF **A01**

PB81-125460

Passenger Transport Innovation in Adelaide: Taxi-Cabs.
PB81-125460 1384 PC **A10**/MF **A01**

PB81-125528

An Interactive Computer System for Evaluating Coal Mine Illumination.
PB81-125528 1348 PC **A02**/MF **A01**

PB81-125536

Illness Behavior in Mid-Life Women. Executive Summary.
PB81-125536 1309 PC **A06**/MF **A01**

PB81-125544

Moving from Reaction to Anticipation in U.S. Import Policies.
PB81-125544 1300 PC **A03**/MF **A01**

PB81-125601

Region V's Guidance for Developing a State Malfunction Notification and Correction Program,
PB81-125601 1384 PC **A04**/MF **A01**

PB81-125619

CETA and Reservation Economic Development. Exemplary Project Handbook: Community-Based Data Collection.
PB81-125619 1303 PC **A06**/MF **A01**

PB81-125635

Bereikbaarheid als Vestigingsplaatsfaktor voor Bedrijven (Attainability as a Location Factor for Industry),
PB81-125635 1300 PC **A04**/MF **A01**

PB81-125650

Onderzoek Naar de Invloed van Alcohol en Afleidingstaak op het Gedrag van de Berijder van een Fietssimulator (Research of the Influence of Alcohol on the Behavior of a Driver of a Bicycle Simulator)--Translation.
PB81-125650 1309 PC **A04**/MF **A01**

PB81-125676

Reprint: Pentachlorophenol in the Environment: Evidence for Its Origin from Commercial Pentachlorophenol by Negative Chemical Ionization Mass Spectrometry.
PB81-125676 1322 PC **A02**/MF **A01**

PB81-125726

Evaluation of HEW - Assisted Programs to the Hispanic Population of Clark County, Nevada.
PB81-125726 1309 PC **A07**/MF **A01**

PB81-125775

Investment Orientations Among Small-Scale Fishermen in the Gulf of Nicoya, Costa Rica,
PB81-125775 1291 PC **A03**/MF **A01**

PB81-125783

Computer Science and Technology: An Analytic Study of a Shared Device Among Independent Computing Systems.
PB81-125783 1357 PC **A09**/MF **A01**

PB81-125825

Environmental Assessment Data Systems User Guide: Project Profile System.
PB81-125825 1299 PC **A09**/MF **A01**

PB81-126039

CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
PB81-126039 1300 PC **A06**/MF **A01**

PB81-126047

CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
PB81-126047 1300 PC **A08**/MF **A01**

PB81-126070

Reprint: Calculations of Electron Beam Spreading in Composite Thin Foil Targets,
PB81-126070 1338 Not available NTIS

PB81-126088

Reactions of Powdered Human Enamel and Fluoride Solutions With and Without Intermediate CaHPO4.2H2O Formation,
PB81-126088 1320 Not available NTIS

PB81-126104

A Mechanism for Incorporation of Carbonate into Apatite,
PB81-126104 1320 Not available NTIS

PB81-126112

Reprint: Ultrasonic Diffraction Technique for Characterization of Fatigue Cracks,
PB81-126112 1397 Not available NTIS

PB81-126120

Reprint: Low Reynolds Number Fluid Flow Induced by Settling Aerosol and Detected by the Particle Doppler Shift Spectrometer,
PB81-126120 1338 Not available NTIS

PB81-126138

Reprint: Some Experimental Problems in the Raman Analysis of Microsamples,
PB81-126138 1338 Not available NTIS

PB81-126146

Reprint: Migration Models for Polymer Additives,
PB81-126146 1323 Not available NTIS

PB81-126153

Reprint: Statistical Thermodynamics of Bulk and Surface Properties of Polymer Mixtures,
PB81-126153 1338 Not available NTIS

PB81-126161

Reprint: Surface Tension Theory of Pure Liquids and Polymer Melts,
PB81-126161 1338 Not available NTIS

PB81-126179

Reprint: Internal Configurations of Span-Constrained Random Walks,
PB81-126179 1377 Not available NTIS

PB81-126187

Reprint: The Lowest Laser-Raman Active Accordion (ALR) Type Oscillations in Crystalline Polymers,
PB81-126187 1339 Not available NTIS

PB81-126195

Reprint: Configurational Properties of Star-Branched Polymers,
PB81-126195 1339 Not available NTIS

PB81-126203

Reprint: Thin Zinc Films on Aluminum,
PB81-126203 1368 Not available NTIS

PB81-126211

Reprint: Adsorption of a Polyfunctional Surface-Active Amine Accelerator on Hydroxyapatite,
PB81-126211 1339 Not available NTIS

PB81-126369

Development of a Chemical Toxicity Assay for Pulp Mill Effluents,
PB81-126369 1339 PC **A06**/MF **A01**

PB81-126450

Study of Pathogenic Free-Living Amebas in Fresh-Water Lakes in Virginia.
PB81-126450 1322 PC **A07**/MF **A01**

PB81-126500

Blood Gas Analyzer System.
PAT-APPL-6-157 380 1324 PC **A03**/MF **A01**

PB81-126559

Reprint: Toxicological and Physiological Responses of the Fish, 'Leiostomus xanthurus', Exposed to Chlorine Produced Oxidants.
PB81-126559 1329 PC **A02**/MF **A01**

PB81-126567

Reprint: The Uptake of Aromatic and Branched Chain Hydrocarbons by Yeast.
PB81-126567 1324 PC **A02**/MF **A01**

PB81-126591

Reprint: Nonselective Biochemical Methods for the Determination of Fungal Mass and Community Structure in Estuarine Detrital Microflora.
PB81-126591 1316 PC **A02**/MF **A01**

PB81-126609

Reprint: Effects of Adaptation on Biodegradation Rates in Sediment/Water Cores from Estuarine and Freshwater Environments.
PB81-126609 1329 PC **A02**/MF **A01**

PB81-126617

Reprint: Correlation of Microbial Degradation Rates with Chemical Structure.
PB81-126617 1324 PC **A02**/MF **A01**

PB81-126732

The Short- and Long-Run Effects of Minimum Wages on the Distribution of Earnings.
PB81-126732 1307 PC **A07**/MF **A01**

PB81-127276

Basin Development and Water Allocation,
PB81-127276 1343 PC **A04**/MF **A01**

PB81-127300

Applied Research in Analytical Photogrammetry.
PB81-127300 1341 PC **A05**/MF **A01**

PB81-127318

Water Resources in North Carolina.
PB81-127318 1343 PC **A04**/MF **A01**

PB81-127326

Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385 PC **A04**/MF **A01**

PB81-127342

A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291 PC **A05**/MF **A01**

PB81-127359

Overcoming Land Use Barriers to Solar Access: Solar Planning Recommendations for Local Communities.
PB81-127359 1385 PC **A07**/MF **A01**

PB81-127383

Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344 PC **A05**/MF **A01**

PB81-127391

Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
PB81-127391 1385 PC **A06**/MF **A01**

PB81-127409

Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385 PC **A03**/MF **A01**

PB81-127417

UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385 PC **A02**/MF **A01**

PB81-127441

Exemptions to the Fair Labor Standards Act - Transportation Sector.
PB81-127441 1307 PC **A04**/MF **A01**

PB81-127490

HF (High Frequency) Radar Measurements of Circulation in the Eastern Strait of Juan de Fuca Near Protection Island (July, 1979).
PB81-127490 1342 PC **A07**/MF **A01**

PB81-127532

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329 PC **A05**/MF **A01**

PB81-127557

Investigation of Factors Affecting Energy for Irrigation Pumping.
PB81-127557 1291 PC **A02**/MF **A01**

PB81-127805

A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385 PC **A03**/MF **A01**

PB81-128167

Drinking Water and Cancer: Review of Recent Findings and Assessment of Risks.
PB81-128167 1329 PC **A06**/MF **A01**

PB81-128290

Metoder foer Bestaemning av Halkfrekventa Vaegstraeckor (Methods for Detecting Road Sections with High Frequency of Ice Formation),
PB81-128290 1385 PC **A03**/MF **A01**

PB81-128316

Studier av Halka Pa Vaegar (Studies of Slipperiness on Roads),
PB81-128316 1385 PC **A03**/MF **A01**

PB81-128472

Yrkesfoerarutbildningen Infoer 1980-Talet. Resultat fran Gruppdiskussioner med Laerare Inom Yrkesfoerarutbildningen Inom Gymnasieskola och Arbetsmarknadsutbildning (Professional Driver Training for the 1980's. Opinions and Experiences of Professional Driver Teachers),
PB81-128472 1307 PC **A03**/MF **A01**

PB81-128670

Factors Influencing Crime and Instability in Urban Housing Developments,
PB81-128670 1309 PC **A14**/MF **A01**

PB81-128688

The Influence of River Water Quality on Storage Reservoir Management.
PB81-128688 1344 PC **A02**/MF **A01**

PB81-128704

Energy Emergency Contingency Plan.

PB81-128704 1363 PC A09/MF A01

PB81-128753
Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
PB81-128753 1369 PC A05/MF A01

PB81-128852
Financial Needs of Small Minority Firms.
PB81-128852 1300 PC A05/MF A01

PB81-128860
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128860 1321 PC A09/MF A01

PB81-128878
Targeted Study of Catastrophic Illness Addressing Spinal Injury.
PB81-128878 1321 PC A02/MF A01

PB81-128936
Study of the Slate Mining Industry of Vermont/New York.
PB81-128936 1300 PC A08/MF A01

PB81-128944
Federally-Supported Human Nutrition Research, Training, and Education: Update for the 1980s. I. Human Nutrition Research and Training.
PB81-128944 1321 PC A05/MF A01

PB81-128969
Field Test of Hydraulic Borehole Mining Systems in Shallow Uranium Sands.
PB81-128969 1348 PC A10/MF A01

PB81-128977
Bus Driver Training Simulator Assessment.
PB81-128977 1307 PC A03/MF A01

PB81-129009
Summary of the Western Energy Overhead Monitoring Project.
PB81-129009 1385 PC A03/MF A01

PB81-129017
Reconnaissance Study of Leachate Quality from Raw Mined Oil Shale - Laboratory Columns.
PB81-129017 1386 PC A04/MF A01

PB81-129090
Research on Energy Conservation for Cars and Goods Vehicles,
PB81-129090 1363 PC A03/MF A01

PB81-129124
Treatment of Primary Effluent by Rapid Infiltration.
PB81-129124 1386 PC A06/MF A01

PB81-129355
Horizontal Flow-Through Coil Planet Centrifuge.
PATENT-4 228 950 1396 Not available NTIS

PB81-129363
Carbocyclic Analogs of Cytosine Nucleosides Exhibiting Antiviral and Antineoplasticactivity.
PATENT-4 232 154 1332 Not available NTIS

PB81-129371
Ternary Salts of Tris(Aminomethyl)Phosphines and Their Oxides Prepared by the Hydrolysis of 1,3,5-Triaza-7-Phosphaadamantane and Its Oxide.
PATENT-4 225 512 1332 Not available NTIS

PB81-129389
Shrinkproofing Wool with Copper Salts of Carboxylic Acids.
PATENT-4 231 747 1369 Not available NTIS

PB81-129397
Quaternary Ureidomethyl Phosphonium Salts.
PATENT-4 228 100 1332 Not available NTIS

PB81-129405
Solubilization of Lignocellulosic Materials.
PAT-APPL-6-180 546 1338 PC A02/MF A01

PB81-129413
Improving the Removal of Lint from Cottonseed.
PAT-APPL-6-180 542 1390 PC A02/MF A01

PB81-129439
Apparatus for Removing Corn from Cob.
PAT-APPL-6-187 380 1323 PC A02/MF A01

PB81-129470
Reprint: Sorption Kinetics of Hydrophobic Pollutants in Natural Sediments. Chapter 11.
PB81-129470 1339 PC A02/MF A01

PB81-129546
Reprint: C-Banding of Chromosomes from Three Established Marine Fish Cell Lines.
PB81-129546 1317 PC A02/MF A01

PB81-129595
Bis(Dihydroxymethyloxoimidazolidinyl)Alkanes.
PAT-APPL-6-180 544 1369 PC A02/MF A01

PB81-129603
Separation of Triphenylphosphine Oxide from Methotrexate Ester and Purification of Said Ester.
PAT-APPL-6-143 129 1338 PC A02/MF A01

PB81-129611
Improved Synthesis of 2,4-Diamino-6-Hydroxymethylpteridine.
PAT-APPL-6-133 766 1332 PC A02/MF A01

PB81-129629
Facile Synthesis of Codeine Precursors from Thebaine.
PAT-APPL-6-115 411 1331 PC A02/MF A01

PB81-129637
Improved Multi-Step Process for the Production of Methanesulfon-m-anisidide, 4'-(9-acridinylamino)-.
PAT-APPL-6-025 157 1331 PC A02/MF A01

PB81-129652
7alpha-Methylnorethindrone Enanthate and Its Use in Long Term Suppression of Fertility in Female Mammals.
PAT-APPL-6-172 086 1325 PC A02/MF A01

PB81-129660
Ethiodized Oil Emulsion for Intravenous Hepatography.
PAT-APPL-6-110 293 1325 PC A02/MF A01

PB81-129686
Aziridinyl Quinone Antitumor Agents.
PATENT-4 233 215 1326 Not available NTIS

PB81-129702
Mask for the Safe Delivery of Inhalation Gases to Small Laboratory Animals.
PAT-APPL-6-195 188 1396 PC A02/MF A01

PB81-129710
Vaegojaemnheters Inverkan pa Bilforarens Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
PB81-129710 1328 PC A04/MF A01

PB81-129801
Water Resource Priorities for the Midwest.
PB81-129801 1386 PC A04/MF A01

PB81-129835
Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1367 PC A06/MF A01

PB81-129975
Postharvest Food Losses in Sri Lanka; Report of a Workshop, 11-16 February 1980.
PB81-129975 1323 PC A04/MF A01

PB81-130015
Lumber Yield Potential of Aspen in the Rocky Mountains.
PB81-130015 1291 PC A02/MF A01

PB81-130049
Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant.
PB81-130049 1322 PC A04/MF A01

PB81-130320
Whole Tree Utilization - The Biomass and Kraft Pulp Quality of 12 Year Old 'E. Grandis' Grown in the Eastern Transvaal.
PB81-130320 1374 PC A03/MF A01

PB81-130361
Assessment, Prediction and Control of Noise Exposure of Construction Plant Operators.
PB81-130361 1388 PC A07/MF A01

PB81-130379
Prediction of Impact Factor for Military Bridges.
PB81-130379 1386 PC A06/MF A01

PB81-130387
Macadamia Nut Shell Flour and Wattle Bark Flour as Fillers and Extenders for Wood Adhesives.
PB81-130387 1367 PC A02/MF A01

PB81-130395
Flow Restrictions in Railway Tunnels,
PB81-130395 1389 PC A05/MF A01

PB81-130437
Motor Vehicles and the Environment: Reply to UNEP (United Nations Environment Programme) Questionnaire.
PB81-130437 1389 PC A03/MF A01

PB81-130502
Modesto Wastewater Facilities Improvements.
PB81-130502 1386 PC A20/MF A01

PB81-130510
Relationship of Resources to Health Care Behavior in Disadvantaged Populations.
PB81-130510 1321 PC A14/MF A01

PB81-130536
Reviews of the Environmental Effects of Pollutants: IX. Fluoride.
PB81-130536 1322 PC A20/MF A01

PB81-130544
Regulating Hospital Capital Investment: The Experience in Massachusetts. Executive Summary.
PB81-130544 1321 PC A02/MF A01

PB81-130551
Regulating Hospital Capital Investment: The Experience in Massachusetts. Final Report.
PB81-130551 1321 PC A17/MF A01

PB81-130619
Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343 PC A99/MF A01

PB81-130676
Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
PB81-130676 1386 PC A19/MF A01

PB81-130718
A Six State Study of Impasse Procedures in the Public Sector.
PB81-130718 1307 PC A12/MF A01

PB81-130759
Gas Saturation in Formation Waters.
PB81-130759 1343 PC A05/MF A01

PB81-130767
Maetning av Braenslefoerbrukning pa Landsvaeg: Effektstudier vid Olika Vaeg- och Trafikmiljoeer (Measurement of Fuel Consumption on Country Roads: Study of Effects of Different Road and Traffic Situations),
PB81-130767 1363 PC A04/MF A01

PB81-130775
Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas),
PB81-130775 1394 PC A04/MF A01

PB81-130783
National Municipal Policy and Strategy for Construction Grants, NPDES Permits, and Enforcement Under the Clean Water Act.
PB81-130783 1386 PC A03/MF A01

PB81-130833
Noise Reduction of Chain Conveyors. Volume I.
PB81-130833 1348 PC A07/MF A01

PB81-130858
Interactive Mine-Power-System Analysis--APL Fault Program.
PB81-130858 1348 PC A06/MF A01

PB81-130866
Steering System Survey for Surface Mining Equipment.
PB81-130866 1348 PC A09/MF A01

PB81-130874
Examination of Farmer-Reported Acreages.
PB81-130874 1291 PC A03/MF A01

PB81-130965
Water Availability for the City of Lamar, Colorado.
PB81-130965 1386 PC A06/MF A01

PB81-131369
Seven-Membered Ring Compounds as Inhibitors of Cytidine Deaminase.
PAT-APPL-6-115 900 1338 PC A03/MF A01

PB81-131377
Electric Gel Slicer.
PAT-APPL-6-174 239 1396 PC A02/MF A01

PB81-131385
Intracranial Pressure Monitoring Device.
PAT-APPL-6-163 952 1324 PC A02/MF A01

PB81-131393
Method for Treating Intraocular Malignancies.
PAT-APPL-6-110 045 1325 PC A02/MF A01

PB81-131401
Improved Method for the Use of Orally Administered 13-Cis-Retinoic Acid in the Treatment of Acne.
PAT-APPL-6-175 504 1325 PC A02/MF A01

PB81-131419
N-Acetyl-Cysteine Protects Against Cardiac Damage from Subsequently-Administered Cardio-Toxic Anthracycline in Cancer Therapy.
PAT-APPL-6-190 064 1326 PC A02/MF A01

PB81-131427
Inactivation on Non-A, Non-B Hepatitis Agent.
PAT-APPL-6-150 320 1325 PC A02/MF A01

PB81-131435
Water Soluble Forms of Retinoids.
PAT-APPL-6-170 570 1332 PC A02/MF A01

PB81-131443
Toluidine Blue Rinse for the Detection of Squamous Carcinoma of the Oral Cavity and Other Structures Composition and Method.
PAT-APPL-6-105 079 1325 PC A02/MF A01

PB81-131450
Contrast Resolution Tissue-Equivalent Ultrasound Test Object.
PAT-APPL-6-186 381 1324 PC A02/MF A01

PB81-131484
Nondenaturing Zwitterionic Detergents for Membrane Biochemistry.
PAT-APPL-6-181 465 1332 PC A02/MF A01

PB81-131658
Wastewater Alternatives for Small Communities,
PB81-131658 1386 PC A17/MF A01

PB81-131765
Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay,
PB81-131765 1317 PC A09/MF A01

PB81-131773
Development and Evaluation of a Long-Term Low Profile Intracorporeal (Abdominal) Left Ventricular Assist Device (THI E-Type ALVAD) Fascicle I.
PB81-131773 1324 PC A23/MF A01

PB81-132037
Chronic Toxicity of Hexavalent Chromium to the Fathead Minnow (Pimephales promelas).

PB81-132037 1329 PC **A02**/MF **A01**

PB81-132045
Abstracts of Ongoing NSF Research Related to the Eruption of Mt. St. Helens.
PB81-132045 1343 PC **A03**/MF **A01**

PB81-132052
Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
PB81-132052 1323 PC **A11**/MF **A01**

PB81-132094
On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
PB81-132094 1340 PC **A07**/MF **A01**

PB81-132151
Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area.
PB81-132151 1386 PC **A04**/MF **A01**

PB81-132169
Proposed Sludge Management Program for the Los Angeles/Orange County Metropolitan Area. Appendices.
PB81-132169 1386 PC **A13**/MF **A01**

PB81-132227
Military Wastes-to-Energy Applications.
PB81-132227 1386 PC **A09**/MF **A01**

PB81-132235
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344 PC **A06**/MF **A01**

PB81-132243
The Overtime Pay Provisions of the Fair Labor Standards Act.
PB81-132243 1300 PC **A09**/MF **A01**

PB81-132268
Residential Solar Data Center MIRADS User's Guide.
PB81-132268 1363 PC **A07**/MF **A01**

PB81-132334
An Evaluation of Swing-Bed Experiments to Provide Long-Term Care in Rural Hospitals. Volume I: Executive Summary.
PB81-132334 1321 PC **A03**/MF **A01**

PB81-132409
Review of the Environmental Effects of Pollutants: X. Toxaphene.
PB81-132409 1323 PC **A21**/MF **A01**

PB81-132557
Research Needed to Advance the State of Knowledge in Robotics, Workshop Held in Newport, Rhode Island on April 15-17, 1980,
PB81-132557 1317 PC **A12**/MF **A01**

PB81-132714
Programmable Assembly Research Technology Transfer to Industry - Phase 2.
PB81-132714 1390 PC **A05**/MF **A01**

PB81-132771
In-Flight Calibration of the NOAA/RFC Meteorological Research Aircraft Instruments at the Air Force Eastern Test Range: 1977-1978.
PB81-132771 1295 PC **A04**/MF **A01**

PB81-132789
New Observations on the Daily Variations of Natural Ice Albedo.
PB81-132789 1350 PC **A03**/MF **A01**

PB81-132854
A Non-Parametric Approach to the Change-Point Problem.
PB81-132854 1377 PC **A03**/MF **A01**

PB81-132870
Data Bases Available at the National Bureau of Standards Library,
PB81-132870 1299 PC **A04**/MF **A01**

PB81-132888
Research and Development Activities in the Department of Transportation and Selected Federal Agencies.
PB81-132888 1297 PC **A08**/MF **A01**

PB81-132912
The Equatorial Latitude of Auroral Activity during 1972-1977,
PB81-132912 1294 PC **A04**/MF **A01**

PB81-132987
The Biological Evaluation of Poly (Vinyl Acetate-Co-Crotonic Acid) Ionomer Hydrogel Coatings.
PB81-132987 1324 PC **A03**/MF **A01**

PB81-132995
Erosion Control Product Testing Using Rainfall Simulation.
PB81-132995 1386 PC **A04**/MF **A01**

PB81-133134
Biotic Communities of the Southwest.
PB81-133134 1342 PC **A03**

PB81-133159
Highway Operation and Plant Damage.
PB81-133159 1387 PC **A12**/MF **A01**

PB81-133316
Reprint: Developing Definitive Methods for Human Serum Constituents--A Progress Report from the CAP (College of American Pathologists) NBS Research Associate,
PB81-133316 1326 Not available NTIS

PB81-133365
Hospital-Medical School Affiliation Agreements: An Organizational Analysis. Executive Summary.
PB81-133365 1307 PC **A14**/MF **A01**

PB81-133373
The Impact of Mobile Coronary Care Units: Executive Summary.
PB81-133373 1321 PC **A02**/MF **A01**

PB81-133381
The Impact of Mobile Coronary Care Units: Final Report.
PB81-133381 1321 PC **A14**/MF **A01**

PB81-133613
Determinants and Effects of Organizational Strategies of Control Directed at Quality of Care in Organized Ambulatory Care Settings.
PB81-133613 1322 PC **A16**/MF **A01**

PB81-133654
Dimensions/NBS. Volume 64, Number 8, October 1980.
PB81-133654 1397 PC **A03**/MF **A01**

PB81-133746
GC/MS Assays for Abused Drugs in Body Fluids,
PB81-133746 1326 PC **A10**/MF **A01**

PB81-134041
California's Salmon Resource - Its Biology, Use and Management.
PB81-134041 1340 PC **A03**/MF **A01**

PB81-134165
The Impact of Demand-Sensitive Railroad Rates Upon the Storage and Transportation System for U.S. Feed Grains.
PB81-134165 1291 PC **A03**/MF **A01**

PB81-134173
Skyline Harvesting in Appalachia.
PB81-134173 1291 PC **A02**/MF **A01**

PB81-134181
SET's: Stand Evaluation Tools. III. Composite Volume and Value Tables for Hardwood Pulpwood.
PB81-134181 1374 PC **A03**/MF **A01**

PB81-134199
Carbohydrate Levels in Current-year Shoots of Sugar Maple.
PB81-134199 1291 PC **A02**/MF **A01**

PB81-134215
Lime Helps Establish Crownvetch on Coal-Breaker Refuse.
PB81-134215 1291 PC **A02**/MF **A01**

PB81-134298
Low-Temperature Forced-Air Drying of Appalachian Hardwoods.
PB81-134298 1375 PC **A02**/MF **A01**

PB81-134314
Silicone Antitranspirant Increases Susceptibility of Eastern White Pine to the White-Pine Weevil.
PB81-134314 1292 PC **A02**/MF **A01**

PB81-135642
A 'Reference Building' Approach to Building Energy Performance Standards for Single-Family Residences.
PB81-135642 1380 PC **A03**/MF **A01**

PB81-135741
Flat Plate Thermal Solar Collectors: A Physical Background,
PB81-135741 1363 PC **A06**/MF **A01**

PB81-135790
Estimation of Spatial Demand for Hospital Services. *
PB81-135790 1322 PC **A09**/MF **A01**

PB81-136202
Optimal Risk-Based Design of Water Resource Engineering Projects.
PB81-136202 1387 PC **A18**/MF **A01**

PB81-137689
Environmental Studies, South Texas Outer Continental Shelf, 1975, Biology and Chemistry.
PB81-137689 1340 PC **A99**/MF **A01**

PB81-137705
Structure and Adjustments of the Farming Sector: A Data Base by Regions.
PB81-137705 1291 PC **A12**/MF **A01**

PB81-137788
The Lubbock, Texas, Tornado May 11, 1970. A Report to the Administrator.
PB81-137788 1295 PC **A03**/MF **A01**

PB81-138067
Arizona Floods of September 5 and 6, 1970. A Report to the Administrator.
PB81-138067 1394 PC **A03**/MF **A01**

PB81-138125
The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387 PC **A04**/MF **A01**

PB81-138133
The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387 PC **A07**/MF **A01**

PB81-138141
The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.
PB81-138141 1387 PC **A10**/MF **A01**

PB81-138158
The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
PB81-138158 1387 PC **A12**/MF **A01**

PB81-138166
The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
PB81-138166 1387 PC **A05**/MF **A01**

PB81-138968
Report of the Task Force on Multifamily Property Utilization: Preliminary Findings from the Field Study,
PB81-138968 1310 PC **A09**/MF **A01**

PB81-138976
Monitoring in Urban Counties.
PB81-138976 1310 PC **A02**/MF **A01**

PB81-138984
Seminar on Transition and Leadership for Newly-Elected Mayors. Final Report on Fall, 1977 Program.
PB81-138984 1307 PC **A04**/MF **A01**

PB81-138992
Services in Support of Housing Search: How Necessary and Effective in the Experimental Housing Allowance Program,
PB81-138992 1310 PC **A19**/MF **A01**

PB81-139008
Enforcing Housing Quality Standards: Some Findings From the Experimental Housing Allowance Program,
PB81-139008 1310 PC **A02**/MF **A01**

PB81-139016
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,
PB81-139016 1310 PC **A04**/MF **A01**

PB81-139024
Integrated Analysis of the Experimental Housing Allowance Program: Sixth Year Report.
PB81-139024 1310 PC **A02**/MF **A01**

PB81-139032
Inflation and Extraordinary Returns on Owner-Occupied Housing: Some Implications for Economic Stabilization and Efficiency,
PB81-139032 1301 PC **A03**/MF **A01**

PB81-139040
Metropolitan Housing and the Income Tax,
PB81-139040 1311 PC **A07**/MF **A01**

PB81-139057
Urban Housing with Discrete Structures,
PB81-139057 1311 PC **A03**/MF **A01**

PB81-139065
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139065 1311 PC **A04**/MF **A01**

PB81-139073
Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139073 1311 PC **A13**/MF **A01**

PB81-139081
Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139081 1311 PC **A99**/MF **A01**

PB81-139099
Codebook for the Survey of Residential Buildings, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139099 1311 PC **A08**/MF **A01**

PB81-139107
Housing Production with Non Profit Sponsors.
PB81-139107 1311 PC **A03**/MF **A01**

PB81-139115
Training Manual for Interviewers.
PB81-139115 1311 PC **A04**/MF **A01**

PB81-139123
Field Supervisor Manual.
PB81-139123 1312 PC **A05**/MF **A01**

PB81-139131
Multifamily Property Utilization Task Force.
PB81-139131 1312 PC **A06**/MF **A01**

PB81-139149
Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139149 1312 PC **A13**/MF **A01**

PB81-139156
Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139156 1312 PC **A08**/MF **A01**

PB81-139164
Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139164 1312 PC **A10**/MF **A01**

PB81-139172
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,

PB81-139172 1312 PC **A05**/MF **A01**

PB81-139180

Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139180 1312 PC **A12**/MF **A01**

PB81-139198

Codebook for the Attitude Module of the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139198 1313 PC **A06**/MF **A01**

PB81-139206

Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139206 1313 PC **A14**/MF **A01**

PB81-139214

Insurance Coverage and Payment Policies. Rapid Turnaround Neighborhood Preservation Research. Task Number 3.
PB81-139214 1313 PC **A03**/MF **A01**

PB81-139222

Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395 PC **A07**/MF **A01**

PB81-139230

Summary of Findings on Home Mortgage Disclosure Act (HMDA) Data Users.
PB81-139230 1299 PC **A03**/MF **A01**

PB81-139248

Study of Loan Management Operations.
PB81-139248 1301 PC **A03**/MF **A01**

PB81-139255

Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139255 1313 PC **A13**/MF **A01**

PB81-139263

Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139263 1313 PC **A13**/MF **A01**

PB81-139271

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part I: Survey Methodology and Findings,
PB81-139271 1301 PC **A06**/MF **A01**

PB81-139289

Study to Indentify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part II: Appendix 1, Home Owner Questionnaire.
PB81-139289 1301 PC **A10**/MF **A01**

PB81-139297

Study to Identify the Existence of Any Housing Credit Market Differentials Between Rural and Other Areas and to Identify Causes of Such Differentials. Volume 8. Part III: Appendix 2, Lending Institution Questionnaire.
PB81-139297 1301 PC **A05**/MF **A01**

PB81-139305

Developing a Spatially Comprehensive Impact Modeling System: A Feasibility Study,
PB81-139305 1301 PC **A03**/MF **A01**

PB81-139313

Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment,
PB81-139313 1313 PC **A04**/MF **A01**

PB81-139321

Workshop on Neighborhood Design Research: Programs and Prospects for Improving the Quality of the Neighborhood Physical Environment. Workshop Framework and Paper Subjects,
PB81-139321 1313 PC **A03**/MF **A01**

PB81-139339

Acute Oral Toxicity Studies in Rats and Rabbits,
PB81-139339 1329 PC **A03**/MF **A01**

PB81-139347

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two Year Oral Toxicity Study in Rats. Report Number 2E.
PB81-139347 1329 PC **A05**/MF **A01**

PB81-139354

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. Two year Oral Toxicity Study in Rats. Report Number 2F.
PB81-139354 1330 PC **A16**/MF **A01**

PB81-139362

Contract for Testing the Acute and Chronic Toxicity of Denatonium Benzoate, an Acerbic Ingredient Proposed for Use in Bad-Tasting Paint to Prevent Paint Pica. One Year Oral Toxicity Study in Monkeys. Report Number 3E.
PB81-139362 1330 PC **A21**/MF **A01**

PB81-139370

Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. Product Development Manual,
PB81-139370 1374 PC **A03**/MF **A01**

PB81-139388

Development of a Lead-Based Paint Hazard Abatement System Utilizing a Carrier-Based Fusible Thermoplastic Resinous Coating. I: Final Report (Task III.F),
PB81-139388 1374 PC **A03**/MF **A01**

PB81-139396

Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139396 1314 PC **A07**/MF **A01**

PB81-139404

Supplemental Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139404 1314 PC **A06**/MF **A01**

PB81-139412

Analyzing Allowance Program Administrative Costs: Account Structures and Methodology,
PB81-139412 1314 PC **A05**/MF **A01**

PB81-139420

Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139420 1314 PC **A04**/MF **A01**

PB81-139438

Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139438 1314 PC **A13**/MF **A01**

PB81-139446

Housing Needs of the Rural Elderly and Handicapped.
PB81-139446 1314 PC **A03**/MF **A01**

PB81-139453

Housing Our Families,
PB81-139453 1314 PC **A09**/MF **A01**

PB81-139461

Codebook for the Attitude Module of the Household Survey, Site II, Wave 4. Housing Assistance Supply Experiment,
PB81-139461 1315 PC **A06**/MF **A01**

PB81-140683

A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
PB81-140683 1387 PC **A04**/MF **A01**

PB81-141996

Flowering and Seed Production in Seven Hardwood Species.
PB81-141996 1292 PC **A02**/MF **A01**

PB81-142192

Assessment of Energy Resource Development Impact on Water Quality: The Yampa and White River Basins.
PB81-142192 1387 PC **A09**/MF **A01**

PB81-801573

The Elderly: Social, Health, and Transportation Problems and Services. 1978-August, 1979 (Citations from the NTIS Data Base).
PB81-801573 1315 PC **N01**/MF **N01**

PB81-801581

The Elderly: Social, Health, and Transportation Problems and Services. September, 1979-December, 1980 (Citations from the NTIS Data Base).
PB81-801581 1315 PC **N01**/MF **N01**

PB81-801615

Ice Fog. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801615 1350 PC **N01**/MF **N01**

PB81-801623

Fishways: Design and Operation. 1964-November, 1980 (Citations from the NTIS Data Base).
PB81-801623 1317 PC **N01**/MF **N01**

PB81-801631

Acid Mine Drainage. 1964-September, 1978 (Citations from the NTIS Data Base).
PB81-801631 1387 PC **N01**/MF **N01**

PB81-801649

Acid Mine Drainage. October, 1978-December, 1980 (Citations from the NTIS Data Base).
PB81-801649 1387 PC **N01**/MF **N01**

PB81-850232

Foundation Piles for Marine Platforms. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850232 1393 PC **N01**/MF **N01**

PB81-850240

Foundation Piles for Land Construction. December, 1976-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850240 1395 PC **N01**/MF **N01**

PB81-850596

Sailplanes. January, 1972-March, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850596 1290 PC **N01**/MF **N01**

PB81-850604

Sailplanes. January, 1970-July, 1980 (Citations from the Engineering Index Data Base).
PB81-850604 1290 PC **N01**/MF **N01**

PB81-850612

Sailplanes. January, 1970-March, 1980 (Citations from the NTIS Data Base).
PB81-850612 1290 PC **N01**/MF **N01**

PB81-850687

Spent Nuclear Fuel Recovery. May, 1972-February, 1980 (Citations from the NTIS Data Base).
PB81-850687 1430 PC **N01**/MF **N01**

PB81-850919

Nondestructive Testing of Joints. January, 1970-September, 1980 (Citations from the Engineering Index Data Base).
PB81-850919 1397 PC **N01**/MF **N01**

PB81-850927

Nondestructive Testing of Joints. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850927 1397 PC **N01**/MF **N01**

PB81-850935

Regional Seismicity. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850935 1350 PC **N01**/MF **N01**

PB81-850943

Magnetic Field Configuration and Plasma Stability/Instability. January, 1970-September, 1980 (Citations from the NTIS Data Base).
PB81-850943 1448 PC **N01**/MF **N01**

PB81-850950

Magnetic Field Configuration and Plasma Stability/Instability. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-850950 1448 PC **N01**/MF **N01**

PB81-850968

Magnetic Field Configuration and Plasma Stability/Instability. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-850968 1448 PC **N01**/MF **N01**

PB81-850984

Systems Analysis Applied to Energy Forecasting. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-850984 1363 PC **N01**/MF **N01**

PB81-850992

Systems Analysis/Operations research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-850992 1388 PC **N01**/MF **N01**

PB81-851008

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851008 1388 PC **N01**/MF **N01**

PB81-851016

Systems Analysis/Operations Research Applied to Transportation Systems. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851016 1388 PC **N01**/MF **N01**

PB81-851024

Resource Conservation and Recovery Act (RCRA). January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851024 1363 PC **N01**/MF **N01**

PB81-851032

Heat Exchangers for Space Heating. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851032 1380 PC **N01**/MF **N01**

PB81-851040

Cyclotrons. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851040 1441 PC **N01**/MF **N01**

PB81-851057

Cyclotrons. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851057 1441 PC **N01**/MF **N01**

PB81-851065

Cyclotrons. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851065 1441 PC **N01**/MF **N01**

PB81-851073

Cyclotrons. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851073 1441 PC **N01**/MF **N01**

PB81-851081

Kalman Filters. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851081 1397 PC **N01**/MF **N01**

PB81-851099

Kalman Filters. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851099 1397 PC **N01**/MF **N01**

PB81-851107

Kalman Filters. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851107 1397 PC **N01**/MF **N01**

PB81-851115

Centrifuges. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851115 1397 PC **N01**/MF **N01**

PB81-851123

Centrifuges. January, 1976-October, 1980 (Citations from the Energy Data Base).

NTIS ORDER/REPORT NUMBER INDEX

PB81-851123 1397 PC N01/MF N01

PB81-851131
Centrifuges. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851131 1397 PC N01/MF N01

PB81-851149
Centrifuges. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851149 1397 PC N01/MF N01

PB81-851198
Extraterrestrial Atmospheres. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851198 1292 PC N01/MF N01

PB81-851248
Densitometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851248 1397 PC N01/MF N01

PB81-851255
Densitometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851255 1397 PC N01/MF N01

PB81-851263
Densitometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851263 1397 PC N01/MF N01

PB81-851271
Densitometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851271 1397 PC N01/MF N01

PB81-851289
Demodulators. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851289 1361 PC N01/MF N01

PB81-851297
Demodulators. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851297 1361 PC N01/MF N01

PB81-851305
Demodulators. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851305 1361 PC N01/MF N01

PB81-851313
Extractive Metallurgy. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851313 1372 PC N01/MF N01

PB81-851321
Extractive Metallurgy. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851321 1372 PC N01/MF N01

PB81-851339
Extractive Metallurgy. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851339 1372 PC N01/MF N01

PB81-851354
Ocean Wave Spectra. January, 1972-September, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851354 1342 PC N01/MF N01

PB81-851362
Seismic Surveys for Coal. January, 1976-September, 1980 (Citations from the Energy Data Base).
PB81-851362 1348 PC N01/MF N01

PB81-851495
Accelerometers. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851495 1397 PC N01/MF N01

PB81-851503
Accelerometers. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851503 1397 PC N01/MF N01

PB81-851511
Accelerometers. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851511 1398 PC N01/MF N01

PB81-851529
Accelerometers. January, 1972-October, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851529 1398 PC N01/MF N01

PB81-851602
Hydrocracking. January, 1970-October, 1980 (Citations from the NTIS Data Base).
PB81-851602 1339 PC N01/MF N01

PB81-851610
Hydrocracking. January, 1976-October, 1980 (Citations from the Energy Data Base).
PB81-851610 1339 PC N01/MF N01

PB81-851628
Hydrocracking. January, 1970-October, 1980 (Citations from the Engineering Index Data Base).
PB81-851628 1339 PC N01/MF N01

PB81-851636
Incentive Contracts. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851636 1297 PC N01/MF N01

PB81-851651
Cost Benefit Analysis Methods. January, 1976-August, 1980 (Citations from the Energy Data Base).
PB81-851651 1297 PC N01/MF N01

PB81-851669
Cost Benefit Analysis Methods. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851669 1297 PC N01/MF N01

PB81-851677
Cost Benefit Analysis Methods. January, 1972-August, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851677 1297 PC N01/MF N01

PB81-851685
Vacuum Diffusion Welding. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851685 1390 PC N01/MF N01

PB81-851693
Long-range Forecasting Methods. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851693 1297 PC N01/MF N01

PB81-851701
Professional Continuing Education. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851701 1307 PC N01/MF N01

PB81-851719
Profilometers. January, 1970-August, 1980 (Citations from the Engineering Index Data Base).
PB81-851719 1398 PC N01/MF N01

PB81-851727
Profit Performance. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851727 1301 PC N01/MF N01

PB81-851784
Nondestructive Testing of Fractures. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851784 1398 PC N01/MF N01

PB81-851792
Nondestructive Testing of Fractures. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851792 1398 PC N01/MF N01

PB81-851800
Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-851800 1398 PC N01/MF N01

PB81-851818
Nondestructive Testing of Structural Welds. January, 1976-June, 1980 (Citations from the Energy Data Base).
PB81-851818 1398 PC N01/MF N01

PB81-851826
Nondestructive Testing of Structural Welds. January, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-851826 1398 PC N01/MF N01

PB81-851834
Nondestructive Testing of Structural Welds. January, 1972-June, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-851834 1398 PC N01/MF N01

PB81-851891
Educational Level Projections. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851891 1307 PC N01/MF N01

PB81-851909
Corporate Manufacturing Policy Formulation. January, 1970-August, 1980 (Citations from the NTIS Data Base).
PB81-851909 1297 PC N01/MF N01

PB81-855058
Computer Simulation of Aircraft. July, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855058 1290 PC N01/MF N01

PB81-855066
Whistlers and Dawn Chorus. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855066 1294 PC N01/MF N01

PB81-855074
Whistlers and Dawn Chorus. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855074 1294 PC N01/MF N01

PB81-855082
Submersible and Semisubmersible Vessels. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855082 1393 PC N01/MF N01

PB81-855090
Varistors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855090 1353 PC N01/MF N01

PB81-855108
Varistors. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855108 1353 PC N01/MF N01

PB81-855124
Plastics Extrusion. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855124 1390 PC N01/MF N01

PB81-855132
Stepper Motors. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855132 1358 PC N01/MF N01

PB81-855140
Thermocouple Applications. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855140 1398 PC N01/MF N01

PB81-855157
Thermocouple Applications. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855157 1398 PC N01/MF N01

PB81-855165
Computer Controlled Forging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855165 1391 PC N01/MF N01

PB81-855173
Brazing and Soldering Aluminum. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855173 1391 PC N01/MF N01

PB81-855215
Sliding Contact Lubricants. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855215 1373 PC N01/MF N01

PB81-855223
Sliding Contact Lubricants. June, 1970-June, 1990 (Citations from the Engineering Index Data Base).
PB81-855223 1373 PC N01/MF N01

PB81-855231
Magnetic Separation of Materials. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855231 1391 PC N01/MF N01

PB81-855249
Magnetic Separation of Materials. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855249 1391 PC N01/MF N01

PB81-855256
Fire Detection and Extinguishment. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855256 1394 PC N01/MF N01

PB81-855272
Radiation Curing of Polymers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855272 1374 PC N01/MF N01

PB81-855298
Encapsulation of Electronic Circuits. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855298 1391 PC N01/MF N01

PB81-855306
Ion Exchange Resins. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855306 1339 PC N01/MF N01

PB81-855314
Pneumoconiosis. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855314 1322 PC N01/MF N01

PB81-855322
Polyethylene Adhesives. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855322 1367 PC N01/MF N01

PB81-855330
Hot Stamping. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855330 1391 PC N01/MF N01

PB81-855348
Engineering Information Systems. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855348 1299 PC N01/MF N01

PB81-855355
Mobile Telephone and Paging. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855355 1410 PC N01/MF N01

PB81-855363
Ultrasonic Transducers. July, 1974-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855363 1353 PC N01/MF N01

PB81-855371
Packaging Machines. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855371 1391 PC N01/MF N01

PB81-855389
Anodizing Aluminum. January, 1969-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855389 1391 PC N01/MF N01

PB81-855397
Synthetic Fibers. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855397 1369 PC N01/MF N01

PB81-855405
Nylon Products. June, 1976-May, 1980 (Citations from the Energy Data Base).
PB81-855405 1374 PC N01/MF N01

PB81-855413
Air Compressors. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).

PB81-855413 1390 PC N01/MF N01

PB81-855421

Cathode Ray Tubes. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855421 1353 PC N01/MF N01

PB81-855439

Isostatic Pressing. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855439 1391 PC N01/MF N01

PB81-855447

Laminar Flow of Fluids in Pipes. June, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855447 1439 PC N01/MF N01

PB81-855454

Sheet Metal Forming. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855454 1391 PC N01/MF N01

PB81-855462

Solenoid Valves. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855462 1394 PC N01/MF N01

PB81-855470

Jet Stream. June, 1970-June, 1980 (Citations from the NTIS Data Base).
PB81-855470 1296 PC N01/MF N01

PB81-855496

Biotelemetry. January, 1974-May, 1980 (Citations from the International Aerospace Abstracts Data Base).
PB81-855496 1316 PC N01/MF N01

PB81-855553

Materials Handling in Manufacturing. June, 1970-June, 1980 (Citations from the Engineering Index Data Base).
PB81-855553 1391 PC N01/MF N01

PD-72-025

Submarine Communication at ULF Frequencies. I. A Program of Investigation.
AD-910 973/7 1409 PC A05/MF A01

PE-11934

Thin Film Optical Waveguide Technology.
AD-919 567/8 1352 PC A04/MF A01

PER-26

Prediction of Concentration Profiles for a NIMCIX Column Absorbing Uranium from Aqueous Solution.
PER-26 1430 PC A02/MF A01

PERME-MEMO-96

Production of Nitrous Oxide in a Rocket Motor Exhaust.
AD-A091 893/8 1380 PC A02/MF A01

PL-26-CR72-0809

Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part II. Development and Fabrication.
AD-902 944/8 1379 PC A04/MF A01

PL-40-CR71-1230

Development of Spacecraft Vuilleumier Cryogenic Refrigerators. Part I. Thermodynamic Design and Study of Life-Limiting Components.
AD-891 461/6 1457 PC A07/MF A01

PMTC-TP-76-7

Analysis of the Power Spectral Density of Tape Recorder Flutter.
AD-B010 481/0 1399 PC A05/MF A01

PNCT-831-78-02

Semi-Annual Progress Report of Power Reactor and Nuclear Fuel Development Corporation, Tokai Works. July-December 1977.
PNCT-831-78-02 1430 PC A06/MF A01

PNCT-841-79-05

Operation Testing Laboratory in PNC Reprocessing Plant, (2). Dissolver Equipment for Chopped Fuel and Solvent Extraction Equipment.
PNCT-841-79-05 1430 PC A03/MF A01

PNL-2720

Preconceptual Design and Assessment of a Tokamak Hybrid Reactor.
PNL-2720 1418 PC A10/MF A01

PNL-3163

Investigation of Halogenated Components Formed from Chlorination of Natural Waters: Preliminary Studies.
NUREG/CR-1299 1337 PC A03/MF A01

PNL-3344

Air Oxidation and Seawater Corrosion of Hastelloy S and Hastelloy C-4.
PNL-3344 1372 PC A04/MF A01

PNL-3439

Some Implications of in Situ Uranium Mining Technology Development.
PNL-3439 1348 PC A08/MF A01

PPPL-1695

Neutronics Calculations for the TFTR Neutron Calorimeter.
PPPL-1695 1418 PC A03/MF A01

PPPL-1697

Mode Converter for Electron Cyclotron Resonance Heating of Toroidal Plasmas.
PPPL-1697 1418 PC A02/MF A01

PPPL-1707

Disruptive Shift of Magnetic Axis in Non-Circular Tokamaks.
PPPL-1707 1418 PC A02/MF A01

PPPL-1709

Anomalous Transport Due to Shear-Alfven Waves.
PPPL-1709 1418 PC A02/MF A01

PPPL-1710

Impurity Ions in a Rotating Tokamak.
PPPL-1710 1434 PC A02/MF A01

PPPL-1712

Tracer Element Injection into PDX Tokamak for Spectral Line Indentification and Localized Doppler Temperature Measurement.
PPPL-1712 1418 PC A02/MF A01

PPPL-1713

Ion Cyclotron Heating of Plasmas with Two-Ion Components.
PPPL-1713 1418 PC A02/MF A01

PPPL-1715

Second Region of Stability.
PPPL-1715 1448 PC A03/MF A01

PPPL-1718

Analytical Study of the External Field for Non-Circular Tokamak with Multipole Moment Expansion Approach.
PPPL-1718 1418 PC A03/MF A01

PPPL-1719

Material Selection for TFTR Limiters.
PPPL-1719 1418 PC A03/MF A01

PPSP/CPC-80-7

Evaluation of C.P. Crane Generating Station Thermal Discharge Effects on the Finfish Community.
PB81-132052 1323 PC A11/MF A01

PPSP/JHU/PPSE-T-14

Aspects of the Population Dynamics of Striped Bass (Morone Saxatilis) Spawning in Maryland Tributaries of the Chesapeake Bay.
PB81-131765 1317 PC A09/MF A01

PR-B-117

Progress Report, Biology and Health Physics Division, January 1 to March 31, 1978.
AECL-6206 1327 PC A04/MF A01

PR-CMA-46

Progress Report, Chemistry and Materials Division, July 1 to September 30, 1978.
AECL-6401 1335 PC A05/MF A01

PRC-R-1577-VOL-1

Expanded Phase I ACS Experiments. Volume I. Experimental System Testing and Evaluation.
AD-893 139/6 1340 PC A05/MF A01

PRC-R-1577-VOL-2

Expanded Phase I ACS Experiments. Volume II. Design Requirements for a Prototype Cartographic Finishing Subsystem.
AD-893 140/4 1340 PC A03/MF A01

PS6104-F

Advanced Production Engineering Study: Shelter System, Collective Protection, Chemical-Biological, XM51.
AD-885 837/5 1399 PC A04/MF A01

PTPT-80-16

Evaluation/Redesign of the F-105 Pitch Rate Gyro Pack.
AD-A092 109/8 1412 PC A02/MF A01

PUB-41065

Basin Development and Water Allocation.
PB81-127276 1343 PC A04/MF A01

PUC-TN-01/79

Gauge Field Copies.
PUC-TN-01/79 1446 PC A02/MF A01

PUC-TN-08/79

Scattering Theory and 1/N Expansion in the Chiral Gross-Neveu Model.
PUC-TN-08/79 1446 PC A02/MF A01

PUC-TN-11/79

Gravitational Torque in General Relativity.
PUC-TN-11/79 1449 PC A02/MF A01

PUC-TN-17/79

Cluster-Bethe Lattice Calculation for the Electronic Structure of Hydrogen Centers in Alkali-Halides.
PUC-TN-17/79 1451 PC A02/MF A01

PURDU-CL-80-03

AGT-1500 Combustor and Fuel Effects Modeling.
AD-A092 255/9 1455 PC A04/MF A01

PWA-FR-11897

Scale-Up of a Titanium Carbonitride Coating System for Titanium Alloys.
AD-A092 245/0 1368 PC A04/MF A01

R77AEG012

YJ101-YF-17 Aircraft Prototype Development Summary.
AD-B022 460/0 1455 PC A04/MF A01

R2018-059-IF-2

Integrated Refractive Effects Prediction System (IREPS): Program Performance Specification. Revision 2.0.
AD-A092 297/1 1452 PC A18/MF A01

RADC/ETR-80-0030

Reprint: Some Physical Insights into Beam Propagation in Strong Turbulence.
AD-A092 004/1 1440 PC A02/MF A01

RADC/ETR-80-0031

Reprint: Defects Induced by Seed Orientation during Quartz Growth.
AD-A092 003/3 1437 PC A02/MF A01

RADC/ETR-80-0032

Reprint: Frequency Dependence of Slant Path Rain Attenuations at 15 and 35 GHZ.
AD-A092 505/7 1413 PC A02/MF A01

RADC-TR-65-58-VOL-1-PT-1

Lightweight radar alarm system. Vol. 1.
AD-482 920/6 1413 PC A07/MF A01

RADC-TR-65-58-VOL-2

Lightweight radar alarm system. Vol. 2.
AD-482 913/1 1413 PC A10/MF A01

RADC-TR-68-197

Engineering Evaluation of the Vanguard M-731 Viewer.
AD-833 815/4 1399 PC A03/MF A01

RADC-TR-68-535

Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437 PC A05/MF A01

RADC-TR-69-168

Perimeter Protection System.
AD-503 039/0 1413 PC A04/MF A01

RADC-TR-71-51

System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399 PC A07/MF A01

RADC-TR-71-83

Engineering Evaluation of the AR-109(XW-1) Viewer-Printer, Projection, Photographic.
AD-884 320/3 1399 PC A06/MF A01

RADC-TR-71-90

Coherent Rear Projection Viewer Evaluation.
AD-884 645/3 1399 PC A03/MF A01

RADC-TR-71-118

Modifications to Devenco Model PPS-3A Radar Fence.
AD-885 234/5 1413 PC A02/MF A01

RADC-TR-71-119

Data Link, Helicopter Supported Radar.
AD-885 551/2 1413 PC A10/MF A01

RADC-TR-71-192

Redundant Area Coding Study.
AD-888 625/1 1358 PC A08/MF A01

RADC-TR-72-19-VOL-1

Expanded Phase I ACS Experiments. Volume I. Experimental System Testing and Evaluation.
AD-893 139/6 1340 PC A05/MF A01

RADC-TR-72-19-VOL-2

Expanded Phase I ACS Experiments. Volume II. Design Requirements for a Prototype Cartographic Finishing Subsystem.
AD-893 140/4 1340 PC A03/MF A01

RADC-TR-72-27-VOL-1

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume I.
AD-892 041/5 1359 PC A19/MF A01

RADC-TR-72-27-VOL-2

Integrated Circuit/Message Switch Feasibility Model Development, Test and Evaluation. Volume II. Appendixes.
AD-892 042/3 1359 PC A08/MF A01

RADC-TR-72-33

Photo-Carto Interface.
AD-893 054/7 1340 PC A10/MF A01

RADC-TR-72-87

Testing of 19.2 KB/S MODEM.
AD-894 759/0 1360 PC A03/MF A01

RADC-TR-72-94

AS-11/B Stereoplotter Experiments and Studies.
AD-900 360/9 1341 PC A08/MF A01

RADC-TR-72-97-VOL-1

'Activision' Optimization. Volume I. Air Base Perimeter Surveillance Testing.
AD-903 700/3 1411 PC A04/MF A01

RADC-TR-72-97-VOL-2

'Activision' Optimization. Volume II. Utilization of 'Activision' for Air to Ground Missile Guidance.
AD-903 701/1 1411 PC A04/MF A01

RADC-TR-72-118

Thin Film Hybrid Pulse Width Discriminator Circuit Fabrication.
AD-900 343/5 1360 PC A03/MF A01

RADC-TR-72-336-VOL-1

Analysis of Barium Clouds. Volume I.
AD-907 560/7 1294 PC A10/MF A01

RADC-TR-72-338

Submarine Communication at ULF Frequencies. I. A Program of Investigation.
AD-910 973/7 1409 PC A05/MF A01

NTIS ORDER/REPORT NUMBER INDEX

RADC-TR-74-4
Off-Line Orthographic Printer.
AD-919 575/1 1399 PC **A06**/MF **A01**

RADC-TR-74-232
The Improved JCVS.
AD-923 431/1 1356 PC **A03**/MF **A01**

RADC-TR-74-258-VOL-1-APP
Air Force Communications Service, Digital Transmission Study. Volume I. Test Results. Appendix Computer Analysis of Isochronous Distortion Data.
AD-B000 632/0 1409 PC **A10**/MF **A01**

RADC-TR-80-177
Feasibility Study of the Combination of MNOS Elements and Bipolar TTL Peripherals on an LSI Circuit Chip.
AD-A091 952/2 1359 PC **A10**/MF **A01**

RADC-TR-80-251-VOL-1
Evaluation of Time Domain EM Coupling Techniques. Volume I.
AD-A092 031/4 1452 PC **A09**/MF **A01**

RADC-TR-80-251-VOL-2
Evaluation of Time Domain EM Coupling Techniques. Volume II.
AD-A092 032/2 1452 PC **A05**/MF **A01**

RADC-TR-80-260
Signal Processing Circuit Development.
AD-A092 371/4 1411 PC **A04**/MF **A01**

RADC-TR-80-271
MILES Pressure/Seismic Response Engineering Development of MILES Test Fixture.
AD-A092 200/5 1400 MF **A01**

RADC-TR-80-273
Bathymetric Data Reduction System.
AD-A091 942/3 1348 PC **A09**/MF **A01**

RADC-TR-80-282
Integrated Coding and Waveform Design Study.
AD-A091 985/2 1410 PC **A17**/MF **A01**

RADC-TR-80-302
Airborne Antenna Pattern Code User's Manual.
AD-A092 316/9 1359 PC **A06**/MF **A01**

RADC-TR-80-322
Failure Rates for Fiber Optic Assemblies.
AD-A092 315/1 1440 PC **A06**/MF **A01**

RAE-LIBRARY BIB-371
Catalogue of the Publications Issued in the Airscrews (AS) and U Non-Departmental Series between 1927 and 1938,
AD-A091 915/9 1288 PC **A02**/MF **A01**

RAE-LIBRARY BIB-372
Catalogue of the Publications Issued by the Gas Dynamics Department, the Supersonics Division of Aerodynamics Department and by the Vibration Department between 1944 and 1950,
AD-A091 916/7 1456 PC **A02**/MF **A01**

RAE-TR-79026
A New Angular Displacement Transducer.
AD-C019 184/1 1396 PC **A02**/MF **A01**

RAE-TR-79120
Flow Measurements in the Wake of a Wing Fitted with a Leading-Edge Root Extension (STRAKE).
AD-A091 891/2 1288 PC **A03**/MF **A01**

RAE-TR-79133
Proton/Electron Damage Ratios for Some Violet, Black and Thin Silicon Solar Cells.
AD-A092 161/9 1363 PC **A04**/MF **A01**

RAE-TR-80052
Features of the Upper Atmosphere Revealed by Analysis of the Orbit of Cosmos 1009 Rocket, 1978-50B.
AD-A091 888/8 1292 PC **A03**/MF **A01**

RAG-52
Life Path Analysis and Performance: Factors Relating to Success Among Minority Enlisted Personnel in the Navy.
AD-A092 275/7 1304 PC **A04**/MF **A01**

RAND/N-1276-HUD
Analyzing Allowance Program Administrative Costs: Account Structures and Methodology,
PB81-139412 1314 PC **A05**/MF **A01**

RAND/N-1354-HUD
Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139149 1312 PC **A13**/MF **A01**

RAND/N-1355-HUD
Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139396 1314 PC **A07**/MF **A01**

RAND/N-1358-HUD
Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139081 1311 PC **A99**/MF **A01**

RAND/N-1361-HUD
Codebook for the Survey of Neighborhoods, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139164 1312 PC **A10**/MF **A01**

RAND/N-1364-HUD
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139065 1311 PC **A04**/MF **A01**

RAND/N-1365-HUD
Codebook for the Attitude Module of the Landlord Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139172 1312 PC **A05**/MF **A01**

RAND/N-1366-HUD
Codebook for the Attitude Module of the Landlord Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139420 1314 PC **A04**/MF **A01**

RAND/N-1370-HUD
Codebook for the Attitude Module of the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139198 1313 PC **A06**/MF **A01**

RAND/N-1372-HUD
Codebook for the Attitude Module of the Household Survey, Site II, Wave 4. Housing Assistance Supply Experiment,
PB81-139461 1315 PC **A06**/MF **A01**

RAND/N-1376-HUD
Supplemental Codebook for the Household Survey, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139206 1313 PC **A14**/MF **A01**

RAND/N-1378-HUD
Supplemental Codebook for the Household Survey, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139255 1313 PC **A13**/MF **A01**

RAND/N-1379-HUD
Supplemental Codebook for the Household Survey, Site II, Wave 3. Housing Assistance Supply Experiment,
PB81-139438 1314 PC **A13**/MF **A01**

RAND/N-1383-HUD
Supplemental Codebook for the Survey of Landlords, Site I, Wave 3. Housing Assistance Supply Experiment,
PB81-139073 1311 PC **A13**/MF **A01**

RAND/N-1384-HUD
Supplemental Codebook for the Survey of Landlords, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139180 1312 PC **A12**/MF **A01**

RAND/N-1386-HUD
Supplemental Codebook for the Survey of Landlords, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139263 1313 PC **A13**/MF **A01**

RAND/N-1391-HUD
Supplemental Codebook for the Survey of Residential Buildings, Site I, Wave 4. Housing Assistance Supply Experiment,
PB81-139156 1312 PC **A08**/MF **A01**

RAND/N-1393-HUD
Supplemental Codebook for the Survey of Residential Buildings, Site II, Wave 2. Housing Assistance Supply Experiment,
PB81-139404 1314 PC **A06**/MF **A01**

RAND/N-1405-HUD
Codebook for the Survey of Residential Buildings, Site I, Wave 3. Housing Assistance Supply Experiment.
PB81-139099 1311 PC **A08**/MF **A01**

RAND/N-1482-AF-PT-1
Models and Techniques for Recoverable Item Stockage when Demand and the Repair Process are Nonstationary. Part I. Performance Measurement.
AD-A091 935/7 1401 PC **A03**/MF **A01**

RAND/N-1584-RC
The Security of Pakistan: A Trip Report.
AD-A092 156/9 1302 PC **A04**/MF **A01**

RCC/OSG-102-80
The Toxicity of Photographic Chemicals.
AD-A091 914/2 1328 PC **A19**/MF **A01**

REC-ERC-79-17
Movements of Lake Trout in Twin Lakes, Colorado, in Relation to the Mt. Elbert Pumped-Storage Powerplant,
PB81-130049 1322 PC **A04**/MF **A01**

REF-80-1
On Distribution and Abundance of Juvenile Fishes in the Upper Chesapeake Bay.
PB81-132094 1340 PC **A07**/MF **A01**

RFP-3010
Mobile Ambient Air Monitor.
RFP-3010 1398 PC **A03**/MF **A01**

RHO-BWI-C-66
Preliminary Geochemical and Physical Testing of Materials for Plugging of Man-Made Accesses to a Repository in Basalt.
RHO-BWI-C-66 1425 PC **A17**/MF **A01**

RHO-CD-34-4Q
Radioactive Liquid Waste Discharged to Ground in the 200 Areas During 1977.
RHO-CD-34-4Q 1425 PC **A11**/MF **A01**

RHO-CD-79-34-4Q
Radioactive Liquid Wastes Discharged to Ground in the 200 Areas During 1979.
RHO-CD-79-34-4Q 1425 PC **A11**/MF **A01**

RISO-R-408
Nonlinear Kinematic Hardening under Non-Proportional Loading.
RISO-R-408 1372 PC **A02**/MF **A01**

RLO-1388-821
Quark Form Factors and Leading Double Logarithms in QCD.
RLO-1388-821 1446 PC **A04**/MF **A01**

RPDL-80-14
Heavy Ion Beam Probing.
DOE/ET/53004-2 1447 PC **A04**/MF **A01**

RR-535
Occurrences of Expansive Limestone in Kentucky.
PB81-123846 1388 PC **A05**/MF **A01**

RR-540
Propagation of Traffic Noise.
PB81-123523 1389 PC **A05**/MF **A01**

RSRE-MEMO-3249
POSER - A Process Organisation to Simplify Error Recovery,
AD-A092 103/1 1354 PC **A02**/MF **A01**

RSRE-MEMO-3257
Microwave Frequency Memory,
AD-A092 104/9 1354 PC **A02**/MF **A01**

S-2796
Power FET Contact Technology.
AD-A092 320/1 1351 PC **A05**/MF **A01**

SAI-76-543-LA
Small Disturbance Transonic Flows About Oscillating Airfoils and Planar Wings.
AD-B008 124/0 1289 PC **A09**/MF **A01**

SAI-76-547-LA
Computer Programs for Calculating Small Disturbance Transonic Flows about Oscillating Planar Wings.
AD-B007 943/4 1356 PC **A06**/MF **A01**

SAI-80-113-W/A-VOL-1
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume I.
AD-A092 203/9 1309 PC **A10**/MF **A01**

SAI-80-113-W/A-VOL-2
An Assessment of the Hypothetical Impact of Drug Abuse on Combat Capability. Volume II.
AD-A092 155/1 1309 PC **A07**/MF **A01**

SAI-131-80-603-LJ
Satellite Measurements of Atmospheric Aerosols.
AD-A092 152/8 1293 PC **A03**/MF **A01**

SAI-462-80-560-LJ
Time-Domain Method for Computing Forces and Moments Acting on Three Dimensional Surface-Piercing Ship Hulls with Forward Speed.
AD-A092 475/3 1393 PC **A03**/MF **A01**

SAM-TR-78-339
Reprint: The Effect of Topical Mydriacyl and Phenylephrine on Cardiac Rate and Rhythm.
AD-A092 050/4 1325 PC **A02**/MF **A01**

SAM-TR-79-240
Reprint: Nursing Introspection: Peer Review.
AD-A092 467/0 1319 PC **A02**/MF **A01**

SAM-TR-79-296
Reprint: The Effect of Errors in Diagnosis and Measurement on the Estimation of the Probability of an Event.
AD-A092 430/8 1377 PC **A02**/MF **A01**

SAM-TR-79-454
Reprint: Retinal Thermal Injury.
AD-A092 466/2 1326 PC **A02**/MF **A01**

SAM-TR-80-249
Reprint: Clinical Applications of Biofeedback.
AD-A092 429/0 1319 PC **A02**/MF **A01**

SAMSO-TR-72-122-VOL-4
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409 PC **A05**/MF **A01**

SAMSO-TR-72-122-VOL-7
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
AD-906 757/0 1409 PC **A09**/MF **A01**

SAMSO/XRS-71-1-VOL-4
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume IV. Technology Trends Software.
AD-919 267/5 1409 PC **A05**/MF **A01**

SAMSO/XRS-71-1-VOL-7
Information Processing/Data Automation Implications of Air Force Command and Control Requirements in the 1980s (CCIP-85). Volume VII. Technology Trends: Integrated Design.
AD-906 757/0 1409 PC **A09**/MF **A01**

SAN-2068-1
Peregrine Falcon Study. Final Report.
SAN-2068-1 1388 PC **A08**/MF **A01**

SAND-79-1944
Particle Beam Fusion Progress Report January 1979 Through June 1979.
SAND-79-1944 1418 PC **A10**/MF **A01**

SAND-79-2468
Assessment of Potential Radionuclide Transport in Site-Specific Geologic Formations.
SAND-79-2468 1425 PC **A03**/MF **A01**

SAND-79-8756
Influence of Air Motion Variation on the Performance of a Direct-Injection Stratified-Charge Engine.
SAND-79-8756 1456 PC **A02**/MF **A01**

SAND-80-0445
Performance Estimates for Personnel Access Control Systems.
SAND-80-0445 1421 PC **A02**/MF **A01**

SAND-80-0834C
High Temperature Electronics and Instrumentation Seminar Proceedings.
SAND-80-0834C 1348 PC **A11**/MF **A01**

SAND-80-0881
Elastic Moduli of Boron Carbide/Copper Composites from -40 exp 0 C to 800 exp 0 C by Ultrasonic Methods.
SAND-80-0881 1369 PC **A04**/MF **A01**

SAND-80-0927
Light Water Reactor Safety Research Program. Volume 14.
NUREG/CR-1469-V-14 1428 PC **A09**/MF **A01**

SAND-80-1121
Ultrasonic Measurement of Elastic Moduli of 17-4 pH Stainless Steel and Uranium -2 Molybdenum from -40 exp 0 C to 800 exp 0 C.
SAND-80-1121 1372 PC **A03**/MF **A01**

SAND-80-1599C
Technical Developments in the WIPP Program.
SAND-80-1599C 1425 PC **A03**/MF **A01**

SAND-80-1944C
STATS: A Unique High Speed, Multiple Channel, Real-Time Data Acquisition System.
SAND-80-1944C 1421 PC **A02**/MF **A01**

SAND-80-1945C
Active Measurements of Defect Processes in Shock Compressed Metals and Other Solids.
SAND-80-1945C 1372 PC **A02**/MF **A01**

SAND-80-1954C
Design and Operation of the Sandia Pilot Plant.
SAND-80-1954C 1388 PC **A03**/MF **A01**

SAND-80-2148C
Radiation Protection: An Analysis of Thyroid Blocking.
SAND-80-2148C 1327 PC **A02**/MF **A01**

SAND-80-7121
Meteciological and Air Quality Data, Quarterly Report. WIPP Site: Eddy County, New Mexico. Autumn Quarter, September 1977-November 1977.
SAND-80-7121 1425 PC **E02**/MF**$3.00**

SAR-80-10071-02
HgCdTe Fabrication Using Directed Energy Techniques.
AD-A091 983/7 1450 PC **A03**/MF **A01**

SBIE-AD-E500/033
Types of Weapon Programs and Their Implications for NATO Standardization or Interoperability.
AD-B033 848/3 1400 PC **A03**/MF **A01**

SBIE-AD-E100117
Generalized Monitoring Facility. Revision I. Installation Guide (W6.4.1).
AD-B031 430/2 1356 PC **A02**/MF **A01**

SBIE-AD-E410088
Survey of Decontamination Methods related to Field Decontamination of Vehicles and Materiel (Abridged).
AD-B031 659/6 1399 PC **A03**/MF **A01**

SBIE-AD-E430281
The Development of an Interior Ballistic Model for Automated Continuous Propellant Production Control.
AD-B040 233/9 1435 PC **A03**/MF **A01**

SC528.33FR
1.06 Micrometer High Sensitivity IR Photocathode.
AD-918 930/9 1411 PC **A04**/MF **A01**

SC5117.6TR
Research of Microstructurally Developed Toughening Mechanisms in Ceramics. Stress Induced Transformation Toughening. Part 1. Size Effects Associated with Constrained Phase Transformation Thermodynamics.
AD-A092 253/4 1367 PC **A03**/MF **A01**

SC5222.1AR
Lifetime Prediction of Organic Coating/Metal System.
AD-A092 382/1 1368 PC **A04**/MF **A01**

SCIENTIFIC-2
A Qualitative Theoretical Characterization of High Energy Excitation Cross Sections.
AD-A092 061/1 1333 PC **A02**/MF **A01**

SD-TR-80-74
Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370 PC **A04**/MF **A01**

SDAC-TR-78-1
Spectral Ratios for Explosions in Salt.
AD-A091 911/8 1349 PC **A03**/MF **A01**

SDAC-TR-79-9
Relationship between Ms and mb for Small Earthquakes in Uzbekistan, USSR.
AD-A091 984/5 1349 PC **A03**/MF **A01**

SDAC-TR-79-10
Revision of the Detection/Analysis System at SDAC.
AD-A091 910/0 1353 PC **A04**/MF **A01**

SERI/PR-635-770
Wind Energy Systems. Quarterly Review, April 1, 1980-June 30, 1980.
SERI/PR-635-770 1366 PC **A10**/MF **A01**

SERI/TR-332-416(V.1)
Review of Thermally Regenerative Electrochemical Systems. Volume I. Synopsis and Executive Summary.
SERI/TR-332-416(V.1) 1366 PC **A04**/MF **A01**

SERI/TR-351-461
Comparative Ranking of 0.1-10 MW/sub E/ Solar Thermal Electric Power Systems. Volume II. Supporting Data. Final Report.
SERI/TR-351-461 1366 PC **A08**/MF **A01**

SERIAL-T-431
Convergence Theory for Unconstrained Minimization,
AD-A092 254/2 1376 PC **A02**/MF **A01**

SEVILLE-TR-79-02-VOL-1
Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume I. Executive Summary.
AD-A092 020/7 1303 PC **A02**/MF **A01**

SEVILLE-TR-79-02-VOL-2
Evaluation of the 175/40 Initial Entry Rotary Wing Flight Training Program. Volume II. Evaluation Report.
AD-A092 021/5 1303 PC **A11**/MF **A01**

SIPL-80-11
Design and Implementation of Multi-Input Adaptive Signal Extractions.
AD-A092 265/8 1355 PC **A04**/MF **A01**

SIT-P2002
Study of the Anatomy of the X-Ray and Neutron Production Scaling Laws in the Plasma Focus.
AD-A091 991/0 1447 PC **A02**/MF **A01**

SLAC-PUB-2575
Proceedings of the Heavy Ion Fusion Workshop.
LBL-10301 1441 PC **A23**/MF **A01**

SLAC-PUB-2593
Measurement of Inclusive eta Production in E exp + E exp - Interactions Near Charm Threshold.
SLAC-PUB-2593 1446 PC **A02**/MF **A01**

SLAC-PUB-2594
Hadronic Decays of the eta/sub C/.
SLAC-PUB-2594 1446 PC **A02**/MF **A01**

SLAC-PUB-2595
Synthesis of Quantum Chromodynamics and Nuclear Physics.
SLAC-PUB-2595 1446 PC **A02**/MF **A01**

SLAC-PUB-2596
Role of Nonspectator Interactions in Charm and Bottom Decays.
SLAC-PUB-2596 1446 PC **A02**/MF **A01**

SLAC-PUB-2605
Exclusive Processes and Hadron Dynamics at Short Distances.
SLAC-PUB-2605 1446 PC **A03**/MF **A01**

SLAC-PUB-2619
Parity Violation in Polarized Electron Scattering.
SLAC-PUB-2619 1447 PC **A02**/MF **A01**

SLAC-PUB-2621
High Intensity Polarized Electron Sources.
SLAC-PUB-2621 1441 PC **A02**/MF **A01**

SLAC-224
Quantum Chromodynamics.
SLAC-224 1447 PC **A99**/MF **A01**

SLAC-229
SLAC Linear Collider Conceptual Design Report.
SLAC-229 1441 PC **A09**/MF **A01**

SOLAR/1029-80/14
Solar Energy System Performance Evaluation, Design Construction, Bigfork, Montana, October 1979-April 1980.
SOLAR/1029-80/14 1380 PC **A05**/MF **A01**

SRI-JSR-80-22
Theory of the Transverse Gradient Wiggler.
AD-A092 212/0 1439 PC **A03**/MF **A01**

SSC-81980
Evaluation of the NASTRAN General Purpose Computer Program.
AD-A092 210/4 1394 PC **A07**/MF **A01**

SSS-R-76-2986
A Summary of Several Parametric Investigations of the Effect of Varying the Material Properties of a Heavy Metal Penetrator.
AD-B015 193/6 1433 PC **A05**/MF **A01**

SSS-R-80-4425
Late Time Containment.
AD-A092 214/6 1421 PC **A05**/MF **A01**

STAN-CS-80-821
Semiantichains and Unichain Coverings in Direct Products of Partial Orders.
AD-A092 256/7 1377 PC **A02**/MF **A01**

STDR-80-41
A Computer Study of High Magnetic Reynolds Number MHD Channel Flow.
AD-A092 215/3 1447 PC **A03**/MF **A01**

STEWS-ID-80-2
Automated Reading of Videotape.
AD-A092 224/5 1355 PC **A04**/MF **A01**

STUDSVIK/K4-79-46
Fuel Model Studies. Release of Tellurium and Cesium from UO sub 2 in LWR Fuel Rods During Irradiation.
STUDSVIK/K4-79-46 1425 PC **A03**/MF **A01**

SWRI-15-2315
Development and Evaluation of a Sonic Intrusion Detector.
AD-500 169/8 1437 PC **A05**/MF **A01**

SYSTAN-D162-VOL-1
Food System Support of the Relocation Strategy in California. Volume I. Analysis.
AD-A092 056/1 1400 PC **A08**/MF **A01**

SYSTAN-D162-VOL-2
Food System Support of the Relocation Strategy in California. Volume II. Prototype Plans and Revised Guidance.
AD-A092 164/3 1400 PC **A05**/MF **A01**

TARADCOM-TR-12522
Analytical Model for the Turning of Tracked Vehicles in Soft Soils.
AD-A092 277/3 1434 PC **A04**/MF **A01**

TASC-TR-316-4-2
Reduced-Order Estimators and Their Application to Aircraft Navigation.
AD-921 863/7 1412 PC **A05**/MF **A01**

TAUP-132-80
Unification Through a Supergroup.
DOE/ER/03992-422 1444 PC **A02**/MF **A01**

TI-U3-707600-02
RF-4C Digital Signal Transfer Unit Multisensor Display System (DSTUMDS).
AD-B010 501/5 1435 PC **A04**/MF **A01**

TI-08-74-41
Magnetic Bubble Research.
AD-B002 919/9 1437 PC **A04**/MF **A01**

TL-632147
Erosion Control Product Testing Using Rainfall Simulation.
PB81-132995 1386 PC **A04**/MF **A01**

TL-632161
The Effectiveness of Horizontal Drains.
PB81-124851 1384 PC **A05**/MF **A01**

TL-635150
Formulation and Evaluation of New Adhesives for Highway Use.
PB81-129835 1387 PC **A06**/MF **A01**

TN-1980-37
A New Algorithm for Two-Dimensional Maximum Entropy Power Spectrum Estimation.
AD-A092 128/8 1358 PC **A04**/MF **A01**

TOP-2-2-501
Swimming Tests of Wheeled and Tracked Vehicles.
AD-A092 393/8 1434 PC **A02**/MF **A01**

TOP-2-2-607
Cooling Systems (Automotive).
AD-A092 236/9 1434 PC **A02**/MF **A01**

TOP-3-2-503
Safety Evaluation of Fire Control Systems - Electrical and Electronic Equipment.
AD-A092 174/2 1435 PC **A03**/MF **A01**

TOP-5-2-551
Radiac Ratemeter Calibration Accuracy.
AD-A092 271/6 1421 PC **A02**/MF **A01**

TOP-6-2-562
Ratemeter Directional Dependence, Radiac.
AD-A092 235/1 1421 PC **A02**/MF **A01**

TR-DXG501-80
Computer-Aided Engineering of Semiconductor Integrated Circuits.
AD-A091 969/6 1351 PC **A18**/MF **A01**

TR-2
Diffusion-Controlled Current at the Stationary Finite Disk Electrode. Theory.
AD-A091 931/6 1332 PC **A03**/MF **A01**
Observations of the Effects of Temperature and Crystallographic Orientation on Surface Segregation in an Fe-Si-Sn-C Alloy.
AD-A092 169/2 1369 PC **A02**/MF **A01**
Carbon Dioxide Activation; Formation of trans- (Ph3P) 2Rh(CO) (OCO2H) in the Reaction of CO2 with HRh(CO) (PPh3) 3/CO.
AD-A092 211/2 1333 PC **A02**/MF **A01**
Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377 PC **A02**/MF **A01**
Molecular Dynamics and Spectra: I. Diatomic Rotation and Vibration.
AD-A092 317/7 1333 PC **A03**/MF **A01**

TR-3
Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358 MF **A01**

TR-6
Rate Accelerating Polymeric Cofactors in the Homogeneous Hydrogenation of Alkenes.

AD-A092 162/7 1333 PC **A02**/MF **A01**

TR-10

The Strain Energy of a Spheroidal Inclusion and Its Application to Bcc-hcp Martensitic Transformation.
AD-A092 247/6 1369 PC **A03**/MF **A01**

TR-13

On the Role of Surface States in Semiconductor Electrode Photoelectrochemical Cells.
AD-A091 958/9 1333 PC **A02**/MF **A01**

TR-14

The Heterogeneous Photocatalytic Decomposition of Benzoic Acid and Adipic Acid on Platinized TiO2 Powder. The Photo-Kolbe Decarboxylative Route to the Breakdown of the Benzene Ring and to the Production to Butane.
AD-A091 973/8 1339 PC **A03**/MF **A01**
Reprint: Effect of Helium, Iron, and Platinum Implantation on the Absorption of Hydrogen by Iron.
AD-A092 432/4 1370 PC **A02**/MF **A01**

TR-15

Reprint: On the Mechanism of Corrosion of Cu-9.4Ni-1.7Fe Alloy in Air Saturated Aqueous NaCl Solution. I. Kinetic Investigations. II. Composition of the Protective Surface Layer.
AD-A092 433/2 1370 PC **A02**/MF **A01**

TR-17-CRD

Influence of Wave Refraction on Coastal Geomorphology-Bull Island to Isle of Palms, South Carolina.
AD-A091 913/4 1341 PC **A10**/MF **A01**

TR-18

Reprint: Freshwater and Atlantic Water in the Kara Sea.
AD-A091 965/4 1348 PC **A02**/MF **A01**
Composite Materials: A Survey of the Damping Capacity of Fiber-Reinforced Composites.
AD-A092 194/0 1368 PC **A02**/MF **A01**
UFVA, A Combined Linear and Nonlinear Factor Analysis Program Package for Chemical Data Evaluation.
AD-A092 213/8 1333 PC **A03**/MF **A01**

TR-19

Vibration of Cylindrical Shells of Bimodulus Composite Materials.
AD-A092 197/3 1368 PC **A03**/MF **A01**

TR-25

Oxy- and Thio Phosphorus Acid Derivatives of Tin. VI. The Crystal and Molecular Structures of Bis(dimethyl dithiophosphinato)dimethyltin(IV) and Bis(diethyl dithiophosphinato)diiodotin(IV) at 138K.
AD-A092 239/3 1333 PC **A03**/MF **A01**

TR-34

Tetracarbon Metallacarboranes 10 On the Thermodynamically Favored Geometry of Large Nido Cages. Structure of the Thermal Rearrangement Product (Isomer III) of (n5-C5H5)CO(CH3)4C4B7H7.
AD-A091 936/5 1332 PC **A03**/MF **A01**

TR-35

Intramolecular B-B Linkage Between Polyhedral Cages in a Commo-Metallacarborane. Synthesis and Structure of a Fluxional Metal-Boron Cluster, (n(5)-C5(CH3)5)2Co3(CH3)4C4B8H7.
AD-A092 269/0 1331 PC **A04**/MF **A01**

TR-36

Mercury-Bridged Cobaltacarborane Complexes Containing B-Hg-B Three-Center Bonds. Synthesis and Structure mu, mu,'-((n(5)-C5R5)Co(CH3)2C2B3H4)Hg, mu-(n(5)-C5R5)Co(CH3)2C2B3H4)HgCl, (R= H, CH3) and Related Compounds.
AD-A092 270/8 1331 PC **A03**/MF **A01**

TR-53

An Approach to Regenerative Simulation on a General State Space.
AD-A092 221/1 1376 PC **A05**/MF **A01**

TR-58

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329 PC **A05**/MF **A01**

TR-64

Reprint: Trends in Surface Atomic Geometries of Compound Semiconductors.
AD-A091 917/5 1449 PC **A02**/MF **A01**

TR-65-ONR

Reprint: Surface Structure of ZnTe(110) as Determined from Dynamical Analysis of Low-Energy-Electron Diffraction Intensities.
AD-A092 088/4 1450 PC **A02**/MF **A01**

TR-80-3

Some Mathematical Considerations in Dealing with the Inverse Problem.
AD-A092 261/7 1377 PC **A02**/MF **A01**

TR-80-4

Extension of Pencil-of-Functions Method to Reverse-Time Processing with First-Order Digital Filters.
AD-A092 226/0 1358 MF **A01**

TR-80-6

Facile Cleavage of the Mo= Mo Bond in Reactions between (Mo2(OBut)6 and Aryl Azides and Molecular Oxygen.
AD-A092 323/5 1334 PC **A02**/MF **A01**

TR-80-9

Assessing Risks through the Determination of Rare Event Probabilities.
AD-A092 192/4 1376 PC **A03**/MF **A01**

TR-80-11

Asymptotic Distributions of Functions of the Eigenvalues of the Real and Complex Noncentral Wishart Matrices.
AD-A092 191/6 1376 PC **A03**/MF **A01**

TR-0081(6910)-1

Cost Estimating Procedure for Unmanned Satellites.
AD-A092 458/9 1457 PC **A02**/MF **A01**

TR-0081(6950-05)-1

Deterioration of Superpolished Metal Mirrors by Blue Haze.
AD-A092 273/2 1370 PC **A04**/MF **A01**

TR-136

Green River Basin Flow Forecasting Models.
PB81-124448 1343 PC **A10**/MF **A01**

TR-309

Reprint: High-Precision Instrumentation System for Sea-Bed Pressure Measurements in Muddy Sediments.
AD-A091 974/6 1348 PC **A02**/MF **A01**

TR-874

Pixel Classification Based on Gray Level and Local 'Busyness'.
AD-A091 996/9 1354 PC **A03**/MF **A01**

TR-900

Image Approximation from Grayscale 'Medial Axes'.
AD-A091 993/6 1354 PC **A03**/MF **A01**

TR-906

Gradient Magnitude as an Aid in Color Pixel Classification.
AD-A091 995/1 1354 PC **A02**/MF **A01**

TR-940

Surfaces in Three-Dimensional Digital Images.
AD-A092 075/1 1354 PC **A02**/MF **A01**

TRADOC-PAM-351-6

Job Performance Aid: Job and Task Analysis.
AD-A091 979/5 1303 PC **A04**/MF **A01**

TRRL-SUPPLEMENTARY-548

A National Survey of Drivers' Attitudes and Knowledge About Speed Limits,
PB81-127805 1385 PC **A03**/MF **A01**

TRRL-SUPPLEMENTARY-591

Research on Energy Conservation for Cars and Goods Vehicles,
PB81-129090 1363 PC **A03**/MF **A01**

TRW-13133-6009-RO-00

LSI Correlator.
AD-887 376/2 1359 PC **A02**/MF **A01**

TRW-13133-6011-RO-00

LSI Correlator.
AD-892 277/5 1360 PC **A03**/MF **A01**

TRW-30435-6007-RU-00

A Study of the Association of Pc 3, 4 Micropulsations with Interplanetary Magnetic Field Orientation & Other Solar Wind Parameters.
AD-A092 369/8 1292 PC **A06**/MF **A01**

TRW-131333-6010-RO-00

LSI Correlator.
AD-890 094/6 1359 PC **A02**/MF **A01**

TSC-FAA-80-18

Airport Ground Access Planning Guide.
AD-A092 018/1 1290 PC **A07**/MF **A01**

TSC-USCG-80-1

Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
AD-A092 158/5 1392 PC **A04**/MF **A01**

TST-26

Design Considerations for the Infrared Airborne Radar (IRAR) MTI Subsystem.
AD-A091 927/4 1411 PC **A05**/MF **A01**

TT-76-53241

Neogene Foraminifera of Sakhalin (Foraminifery Neogenovich Otlozhenit Sakhalina Leningrad Vses)--Translation.
PB81-130619 1343 PC **A99**/MF **A01**

UAG-78

The Equatorial Latitude of Auroral Activity during 1972-1977,
PB81-132912 1294 PC **A04**/MF **A01**

UC-7245

System Design Study for Human Readable Machine Readable (HRMR) Information Processor.
AD-883 122/4 1399 PC **A07**/MF **A01**

UCAL-WRC-W-576

A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
PB81-140683 1387 PC **A04**/MF **A01**

UCAR-10042-80

National Mirror Fusion Program Plan.
UCAR-10042-80 1419 PC **A07**/MF **A01**

UCB/EERC-78/17

Strength of Timber Roof Connections Subjected to Cyclic Loads,
PB81-139222 1395 PC **A07**/MF **A01**

UCB/EERC-79/34

Interaction Effects of Simultaneous Torsional and Compressional Cyclic Loading of Sand.
AD-A092 352/4 1350 MF **A01**

UCB/EERC-80/10

General Applicability of a Nonlinear Model of a One Story Steel Frame,
PB81-124877 1395 PC **A06**/MF **A01**

UCB/EERC-80/11

A Green-Function Method for Wave Interaction with a Submerged Body,
PB81-122269 1438 PC **A07**/MF **A01**

UCB/EERC-80/12

Hydrodynamic Pressure and Added Mass for Axisymmetric Bodies,
PB81-122343 1438 PC **A08**/MF **A01**

UCB/EERC-80/15

A Response Spectrum Method for Random Vibrations,
PB81-122301 1394 PC **A03**/MF **A01**

UCB/EERC-80/16

Cyclic Inelastic Buckling of Tubular Steel Braces,
PB81-124885 1395 PC **A10**/MF **A01**

UCB/EERC-80/17

Dynamic Response of Simple Arch Dams Including Hydrodynamic Interaction,
PB81-124000 1384 PC **A13**/MF **A01**

UCB/EERC-80/21

Development and Testing of Restraints for Nuclear Piping Systems.
UCB/EERC-80/21 1422 PC **A05**/MF **A01**

UCB/EERC-80/22

3D Solid Element (Type 4 - Elastic or Elastic-Perfectly-Plastic) for the ANSR-II Program,
PB81-123242 1449 PC **A03**/MF **A01**

UCEER-6

Proceedings of the National Meeting of the Universities Council for Earthquake Engineering Research (6th) Held at Urbana-Champaign, Illinois on May 1-2, 1980,
PB81-120081 1350 PC **A13**/MF **A01**

UCID-18521

Tests of Proprietary Chemical Additives as Antiscalants for Hypersaline Geothermal Brine. Final Report.
UCID-18521 1372 PC **A03**/MF **A01**

UCID-18676

Technical Evaluation of the Proposed Technical Specification Change for the Arkansas Nuclear Power Station, Unit 2.
UCID-18676 1422 PC **A02**/MF **A01**

UCID-18681

Effects of Dimensionality and Boundary Conditions on Thermal Calculations.
UCID-18681 1425 PC **A02**/MF **A01**

UCID-18683

Technical Evaluation of the Noise and Isolation Testing of the Reactor Protection System for the Davis Besse Nuclear Power Station, Unit 1.
UCID-18683 1428 PC **A02**/MF **A01**

UCID-18783

Preliminary Comparisons Between Measurements and Model Calculations for the TMI Venting of exp 85 Kr.
UCID-18783 1426 PC **A02**/MF **A01**

UCID-18819

Efficient Design of Two-Dimensional Recursive Digital Filters. Final Report.
UCID-18819 1361 PC **A02**/MF **A01**

UCLA-ENG-8040

Comparison of the Best Known Fracture Criteria with Data on Naturally Occurring Cracks.
AD-A092 480/3 1449 PC **A02**/MF **A01**

UCLA-12-1253

Annual Progress Report, July 1, 1979-June 30, 1980.
UCLA-12-1253 1322 PC **A09**/MF **A01**

UCRL-15275

Inspection Methods for Physical Protection Task III Review of Other Agencies' Physical Security Activities for Research Reactors.
UCRL-15275 1429 PC **A03**/MF **A01**

UCRL-15281

Data Report of a Pretest Analysis of Soil-Structure Interaction and Structural Response in Low-Amplitude Explosive Testing (50 KG) of the Heissdampfreaktor (HDR).
UCRL-15281 1429 PC **A09**/MF **A01**

UCRL-15284

Symbolic Software for CTR Research.
UCRL-15284 1419 PC **A02**/MF **A01**

UCRL-15285

AR Film on Phase-Separated Glass. Final Report, January 1979-April 1980.
UCRL-15285 1440 PC **A02**/MF **A01**

UCRL-15292

Inertial Confinement Fusion Research and Development Studies. Final Report, October 1979-August 1980.
UCRL-15292 1419 PC **A05**/MF **A01**

UCRL-52916

Interactive Graphics, the Design Process, and Education.
UCRL-52916 1357 PC **A03**/MF **A01**

UCRL-52959

Utilization of the Atmospheric Release Advisory Capability (ARAC) Services During and after the Three Mile Island Accident.

UCRL-52959 1426 PC A03/MF A01

UCRL-52960-3
Technology of Machine Tools. Volume 3. Machine Tool Mechanics.
UCRL-52960-3 1392 PC A19/MF A01

UCRL-83794
Recent Laser-Plasma Interaction Experiments at the Lawrence Livermore National Laboratory.
UCRL-83794 1419 PC A03/MF A01

UCRL-84153
Three-Dimensional Thermal Analysis of a Baseline Spent Fuel Repository.
UCRL-84153 1425 PC A02/MF A01

UCRL-84233
Buildup Studies of a Tandem Mirror Reactor with Inboard Thermal Barriers.
UCRL-84233 1419 PC A02/MF A01

UCRL-84235
Technology of Direct Conversion for Mirror Reactor End-Loss Plasma.
UCRL-84235 1419 PC A02/MF A01

UCRL-84271
Consistent HYLIFE Wall Design That Withstands Transient Loading Conditions.
UCRL-84271 1419 PC A02/MF A01

UCRL-84272
Parametric Analysis of Stress in the ICF HYLIFE Converter Structure.
UCRL-84272 1419 PC A02/MF A01

UCRL-84273
Properties of Lead-Lithium Solutions.
UCRL-84273 1419 PC A02/MF A01

UCRL-84275
ICF ETF And Its Engineering Development Requirements.
UCRL-84275 1419 PC A02/MF A01

UCRL-84463
Metallic Coating of Microspheres.
UCRL-84463 1420 PC A03/MF A01

UCRL-84478
Recent Advances in Pt Coating of Microspheres by a Batch Magnetron Sputtering Process.
UCRL-84478 1420 PC A02/MF A01

UCRL-84888
Negative Deuterium Ions for Tandem Mirror Next Step and Tandem Mirror Reactors.
UCRL-84888 1420 PC A02/MF A01

UCRL-85002
MFTF-Progress and Promise.
UCRL-85002 1420 PC A02/MF A01

UCRL-85019
Impact of Land Use on Solar Industrial Process Heat for the Food Processing Industry.
UCRL-85019 1388 PC A02/MF A01

UCRL-85033
Numerical Solution of Initial-Value Problems in Plasma Physics.
UCRL-85033 1448 PC A03/MF A01

UDR-TR-80-29
Mechanical Property Evaluation of Aluminum Alloy 7010-T73651.
AD-A091 945/6 1369 PC A03/MF A01

UI-216-34
Comparison of the Experimental Housing Allowance Program and Great Britain's Rent Allowance Program,
PB81-139016 1310 PC A04/MF A01

UI-1116
Urban Housing with Discrete Structures,
PB81-139057 1311 PC A03/MF A01

UILU-ENG-80-1724
One-Leg Formulas for Stiff Differential Equations.
COO-2383-0070 1357 PC A04/MF A01

UILU-ENG-80-4005
TRANNOZ: A Computer Program for Analysis of Transonic Throat Flow in Axisymmetric, Planar, and Annular Supersonic Nozzles.
AD-A091 924/1 1454 PC A05/MF A01

UIUCDCS-R-80-1013
One-Leg Formulas for Stiff Differential Equations.
COO-2383-0070 1357 PC A04/MF A01

UM-HSRI-80-38
Statistical Analysis of the National Crash Severity Study Data.
PB81-124679 1394 PC A20/MF A01

UMS-PUB-21(DR)
Interaction of Drugs in the Hyperbaric Environment, Bethesda, Maryland, 13-14 September 1979. The Undersea Medical Workshop (21st),
AD-A092 451/4 1328 PC A06/MF A01

UMTA-IT-06-0193-79-2
The Trolley Coach: Potential Market, Capital and Operating Costs, Impacts and Barriers. Task 2 Report for the Electric Trolley Bus Feasibility Study.
PB81-120172 1388 PC A05/MF A01

UMTA-MA-06-0051-80-2
Identification and Evaluation of Operational Alternatives for Materials Data Bank.
PB81-124869 1389 PC A03/MF A01

UMTA-MA-06-0074-80-1
Bus Driver Training Simulator Assessment.
PB81-128977 1307 PC A03/MF A01

UMTA-NY-09-0054-80-1
Energy Emergency Contingency Plan.
PB81-128704 1363 PC A09/MF A01

UNC-WRRI-80-00
Water Resources in North Carolina.
PB81-127318 1343 PC A04/MF A01

UNI-TR-4
Ultrasonic Flowmeters: A Progress Report.
UNI-TR-4 1398 PC A04/MF A01

URSA-77-17
CETA and Reservation Economic Development. Exemplary Project Handbook: Planning for Economic Development. Volume 1.
PB81-126039 1300 PC A06/MF A01
CETA and Reservation Economic Development. Exemplary Project Handbook: Participating in Economic Development Volume 2.
PB81-126047 1300 PC A08/MF A01

USAEHA-75-51-0132-80
Physiological and Pharmacological Effects Following Oral Administration of Monopropellants, August 1978-September 1979.
AD-B042 976/1 1328 PC A02/MF A01

USAFESA-TS-2063
Local Energy Monitoring and Control Analysis.
AD-A091 929/0 1378 PC A04/MF A01

USAFESA-TS-2067
Laundry Heat Recovery, USMA, West Point.
AD-A092 060/3 1378 PC A02/MF A01

USARIEM-M-12/80
The Effect of Two Years Training on Aerobic Power and Muscle Strength of Male and Female Cadets,
AD-A092 359/9 1324 PC A02/MF A01

USARIEM-M-19/80
Sex Differences in Acclimation to a Hot-Dry Environment,
AD-A092 360/7 1327 PC A02/MF A01

USARIEM-M-29/80
Prediction of Energy Expenditure during Load Carriage at High Altitude,
AD-A092 361/5 1327 PC A02/MF A01

USARIEM-M-32/80
Effect of Low Potassium Diet on Rat Exercise Hyperthermia and Heatstroke Mortality,
AD-A092 288/0 1327 PC A03/MF A01

USCG-D-12-80-VOL-1
Simulators for Mariner Training and Licensing. Phase I. The Role of Simulators in the Mariner Training and Licensing Process. Volume I.
AD-A091 926/6 1303 PC A04/MF A01

USCG-D-12-80-VOL-2
Simulators for Mariner Training and Licensing. Phase 1. The Role of Simulators in the Mariner Training and Licensing Process. Volume II.
AD-A092 177/5 1304 PC A99/MF A01

USCG-D-36-80
Forecast of Remote Underwater Sensing Technology.
AD-A092 390/4 1407 PC A17/MF A01

USCG-D-54-80
Simulation of Coast Guard Vessel Traffic Service Operations by Model and Experiment.
AD-A092 158/5 1392 PC A04/MF A01

USCG-D-81-79
Inflatable Liferaft Stability Study.
AD-A091 986/0 1323 PC A06/MF A01

USGS/WRD/WRI-80/078
Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975.
PB81-130676 1386 PC A19/MF A01

USGS/WRD/WRI-80/080
Evaluation of Urban Runoff Studies Conducted Under the '208' Program.
PB81-132235 1344 PC A06/MF A01

USGS/WRI-80-77
Chemical Quality of Water from Community Systems in New York, November 1970 to May 1975,
PB81-130676 1386 PC A19/MF A01

USL-TM-2070-412-69
Congrats Temperature and Salinity to Sound Speed Conversion.
AD-B022 435/2 1436 PC A03/MF A01

USNA-TSPR-109
Deep Level Transient Spectroscopy as an Experimental Technique.
AD-A091 941/5 1449 PC A03/MF A01

USNRDL-TR-67-90(EX)
Fallout from Nuclear Cratering Shot DANNY BOY. I. Radiochemical Analysis and Some Physical Observations on Selected Samples,
AD-B951 703/8 1421 PC A03/MF A01

UTRC-R75-952051-13
Three to Five Micron VET Laser Investigation.
AD-B015 026/8 1439 PC A04/MF A01

UTRC/R80-922617-5
Investigation of Plasma Processes in Electronic Transition Lasers.
AD-A091 903/5 1439 PC A05/MF A01

UTRC-R-80-954876-1
Plasma Stabilization Experiment. Final Report, 1 October 1979-30 April 1980.
DOE/ET/53087-2 1448 PC A05/MF A01

UTTAC-15
Analyzing Power for the exp 208 Pb(Polarized p,T) exp 206 Pb(3 exp +) Reaction and (P,D) (D,T) Sequential Transfer Processes.
UTTAC-15 1447 PC A02/MF A01

UWRL/P-80/05
Management of the Hydrologic System in Areas Subject to Coal Mining Activities,
PB81-127383 1344 PC A05/MF A01

VA-80/0001
Evaluation of Alternative Interment Methods for National Cemeteries.
PB81-123879 1309 PC A09/MF A01

VPI-E-80.30
Seismic Stability Evaluation of Earth Structures.
PB81-123069 1351 PC A07/MF A01

VPI-VWRRC-BULL-129
Direct Filtration of Virginia Surface Waters: Feasibility and Costs,
PB81-127391 1385 PC A08/MF A01

VRI-ARI-3-FR79-3
Description of the Tactical Operations System Information Flow Model.
AD-A092 206/2 1408 PC A05/MF A01

VRI-ARI-3-FR79-4
Analysis of Information Flow in the Tactical Operations System (TOS).
AD-A092 205/4 1408 PC A05/MF A01

VRI-ARI-3-FR80-3
User's Manual for the Tactical Operations System Analysis Package.
AD-A092 207/0 1403 PC A03/MF A01

VRI-ARI-3-FR80-4
Programmer's Manual for the Tactical Operations System Analysis Package.
AD-A092 208/8 1408 PC A08/MF A01

VTI/MEDDELANDE-172
Trafiksaekerheten pa Stoerre Trafikleder i Taetort (Traffic Safety at Traffic Junctions in Heavily Populated Areas),
PB81-130775 1394 PC A04/MF A01

VTI/MEDDELANDE-181
Maetning av Braenslefoerbrukning pa Landsvaeg: Effektstudier vid Olika Vaeg- och Trafikmiljoeer (Measurement of Fuel Consumption on Country Roads: Study of Effects of Different Road and Traffic Situations),
PB81-130767 1363 PC A04/MF A01

VTI/MEDDELANDE-193
Aquaplaning Tests, 1967 to 1969. Investigation of Braking Action Developed by Motor Car Wheels,
PB81-126753 1389 PC A05/MF A01

VTI/MEDDELANDE-196
Yrkesfoerarutbildningen Infoer 1980-Talet. Resultat fran Gruppdiskussioner med Laerare Inom Yrkesfoerarutbildningen Inom Gymnasieskola och Arbetsmarknadsutbildning (Professional Driver Training for the 1980's. Opinions and Experiences of Professional Driver Teachers),
PB81-128472 1307 PC A03/MF A01

VTI-181
Vaegojaemnheters Inverkan pa Bilfoerares Prestation och Troetthet. En Litteraturgenomgang och ett Simulatoresperiment (The Influence of Road Roughness on Drivers' Performance and Tiredness. A Literature Survey and a Simulator Experiment),
PB81-129710 1328 PC A04/MF A01

W81-00279
Indiana Five-Year Water Resources Research and Development Plan. Fiscal Years 1982-1986.
PB81-121253 1383 PC A07/MF A01

W81-00314
A Regional Evaluation of Off-Season Agricultural Use of Water and Energy Resources.
PB81-127342 1291 PC A05/MF A01

W81-00316
Further Investigations of Alumina-Lime-Soda Water Recovery Applications.
PB81-127326 1385 PC A04/MF A01

W81-00317
The Allocation of Water to Instream Flows: A Comparative Study of Policy Making and Technical Information in the States of Colorado, Idaho, Montana and Washington. Volume I.
PB81-138125 1387 PC A04/MF A01

W81-00318
The Allocation of Water to Instream Flows: Colorado Water Resources Management. Volume II.
PB81-138133 1387 PC A07/MF A01

W81-00319
The Allocation of Water to Instream Flows: Idaho Water Resources Management. Volume III.

PB81-138141 1387 PC **A10**/MF **A01**

W81-00320

The Allocation of Water to Instream Flows: Montana Water Resources Management. Volume IV.
PB81-138158 1387 PC **A12**/MF **A01**

W81-00321

The Allocation of Water to Instream Flows: Washington Water Resources Management. Volume V.
PB81-138166 1387 PC **A05**/MF **A01**

W81-00322

A Trophic Classification of Minnesota Lakes Based on Lake Sediments.
PB81-124141 1343 PC **A02**/MF **A01**

W81-00325

Water Resources in North Carolina.
PB81-127318 1343 PC **A04**/MF **A01**

W81-00329

Green River Basin Flow Forecasting Models.
PB81-124448 1343 PC **A10**/MF **A01**

W81-00380

Conservation Impacts and Practices of Sand Removal from Dry Bed Oklahoma Rivers.
PB81-124158 1384 PC **A03**/MF **A01**

W81-00501

Direct Filtration of Virginia Surface Waters: Feasibility and Costs.
PB81-127391 1385 PC **A06**/MF **A01**

W81-00502

Management of the Hydrologic System in Areas Subject to Coal Mining Activities.
PB81-127383 1344 PC **A05**/MF **A01**

W81-00503

UV-Ozone and UV-Oxygen Process for Color Removal from Textile Dyeing and Finishing Wastewaters.
PB81-127417 1385 PC **A02**/MF **A01**

W81-00504

Removal of Trace Metals from Sediments Under Chemico-Osmotic Gradients.
PB81-127409 1385 PC **A03**/MF **A01**

W81-00508

Concordance of Heavy Metal and Antibiotic Resistance on Plasmids of Chesapeake Bay Bacteria.
PB81-127532 1329 PC **A05**/MF **A01**

W81-00509

Investigation of Factors Affecting Energy for Irrigation Pumping.
PB81-127557 1291 PC **A02**/MF **A01**

W81-00514

Basin Development and Water Allocation.
PB81-127276 1343 PC **A04**/MF **A01**

W81-00515

The Influence of River Water Quality on Storage Reservoir Management.
PB81-128688 1344 PC **A02**/MF **A01**

W81-00751

A Systems Approach to Solving Resource Allocation Problems with Multiple Objectives.
PB81-140683 1387 PC **A04**/MF **A01**

WA-79-50F

Steering System Survey for Surface Mining Equipment.
PB81-130866 1348 PC **A09**/MF **A01**

WAPD-TM-1468

Successive Collision Calculation of Resonance Absorption (AWBA Development Program).
WAPD-TM-1468 1430 PC **A03**/MF **A01**

WES/MP/GL-80-15

Mathematical Analyses of Landside Seepage Berms.
AD-A092 014/0 1350 PC **A04**/MF **A01**

WFPS-TME-78-100

Structural Evaluation of a DTHR Bundle Divertor Particle Collector.
WFPS-TME-78-100 1420 PC **A03**/MF **A01**

WHOI-CONTRIB-3985

Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349 PC **A02**/MF **A01**

WHOI-CONTRIB-4068

Reprint: Oblique Anhysteretic Remanent Magnetization.
AD-A092 081/9 1349 PC **A02**/MF **A01**

WHOI-CONTRIB-4199

Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341 PC **A03**/MF **A01**

WHOI-CONTRIB-4223

Reprint: Geostrophic Vorticity Balance in Midocean.
AD-A092 080/1 1341 PC **A02**/MF **A01**

WHOI-CONTRIB-4252

Reprint: Acoustics and the Behavior of Sperm Whales.
AD-A092 082/7 1340 PC **A02**/MF **A01**

WHOI-CONTRIB-4260

Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340 PC **A02**/MF **A01**

WHOI-CONTRIB-4300

Reprint: Click Sounds from Animals at Sea.
AD-A092 064/5 1340 PC **A02**/MF **A01**

WHOI-CONTRIB-4303

Reprint: Eddies Off the Somali Coast During the Southwest Monsoon.
AD-A092 324/3 1341 PC **A02**/MF **A01**

WHOI-CONTRIB-4326

Reprint: Critical Layers and the Garrett-Munk Spectrum.
AD-A092 464/7 1342 PC **A02**/MF **A01**

WHOI-CONTRIB-4339

Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342 PC **A02**/MF **A01**

WHOI-CONTRIB-4340

Reprint: Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.
AD-A092 327/6 1341 PC **A03**/MF **A01**

WHOI-CONTRIB-4341

Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342 PC **A02**/MF **A01**

WHOI-CONTRIB-4355

Reprint: Anomalous Water in the Deep Ocean Suggests Lateral Advection-Stirring.
AD-A092 000/9 1348 PC **A02**/MF **A01**

WHOI-CONTRIB-4359

Reprint: Flow Structures of the Benthic Ocean.
AD-A092 325/0 1341 PC **A02**/MF **A01**

WHOI-CONTRIB-4394

Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407 PC **A02**/MF **A01**

WHOI-CONTRIB-4403

Reprint: A Technique for Measuring the Plane-Wave Reflection Coefficient of the Ocean Bottom.
AD-A091 880/5 1436 PC **A02**/MF **A01**

WHOI-CONTRIB-4419

Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406 PC **A02**/MF **A01**

WHOI-CONTRIB-4421

Reprint: Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
AD-A092 001/7 1340 PC **A02**/MF **A01**

WHOI-CONTRIB-4422

Reprint: On Production and Dissipation of Thermal Variance in the Oceans.
AD-A092 486/0 1349 PC **A02**/MF **A01**

WHOI-80-43

Seasonal Variability in the Intermediate Waters of the Eastern North Atlantic.
AD-A091 937/3 1341 PC **A08**/MF **A01**

WHOI-80-44

Reprint: Anomalous Water in the Deep Ocean Suggests Lateral Advection-Stirring.
AD-A092 000/9 1348 PC **A02**/MF **A01**

WHOI-80-45

Reprint: Benjamin Franklin and Timothy Folger's First Printed Chart of the Gulf Stream.
AD-A092 001/7 1340 PC **A02**/MF **A01**

WHOI-80-46

Reprint: Estimation of Differential Doppler Shifts.
AD-A091 998/5 1406 PC **A02**/MF **A01**

WHOI-80-47

Reprint: Current System South and East of the Grand Banks of Newfoundland.
AD-A091 999/3 1341 PC **A03**/MF **A01**

WHOI-80-48

Reprint: Click Sounds from Animals at Sea.
AD-A092 064/5 1340 PC **A02**/MF **A01**

WHOI-80-49

Reprint: Geostrophic Vorticity Balance in Midocean.
AD-A092 080/1 1341 PC **A02**/MF **A01**

WHOI-80-50

Reprint: Oblique Anhysteretic Remanent Magnetization.
AD-A092 081/9 1349 PC **A02**/MF **A01**

WHOI-80-51

Reprint: Acoustics and the Behavior of Sperm Whales.
AD-A092 082/7 1340 PC **A02**/MF **A01**

WHOI-80-52

Composition and Characteristics of Particles in the Ocean: Evidence for Present Day Resuspension.
AD-A092 231/0 1349 PC **A11**/MF **A01**

WHOI-80-54

Reprint: Migration Rate of Mud Bacteria as a Function of Magnetic Field Strength.
AD-A092 326/8 1340 PC **A02**/MF **A01**

WHOI-80-55

Reprint: Internal Waves, Finestructure, Microstructure, and Mixing in the Ocean.
AD-A092 327/6 1341 PC **A03**/MF **A01**

WHOI-80-56

Reprint: Observed and Numerically Simulated Kinetic Energies for MODE Eddies.
AD-A092 485/2 1342 PC **A02**/MF **A01**

WHOI-80-57

Reprint: On Production and Dissipation of Thermal Variance in the Oceans.
AD-A092 486/0 1349 PC **A02**/MF **A01**

WHOI-80-58

Reprint: Eddies Off the Somali Coast During the Southwest Monsoon.
AD-A092 324/3 1341 PC **A02**/MF **A01**

WHOI-80-59

Reprint: Flow Structures of the Benthic Ocean.
AD-A092 325/0 1341 PC **A02**/MF **A01**

WHOI-80-60

Reprint: Submersible Studies of Deep-Sea Furrows and Transverse Ripples in Cohesive Sediments.
AD-A092 484/5 1349 PC **A02**/MF **A01**

WHOI-80-61

Reprint: A Wide Range Sonar System for Oceanic Investigations.
AD-A092 463/9 1407 PC **A02**/MF **A01**

WHOI-80-62

Reprint: Critical Layers and the Garrett-Munk Spectrum.
AD-A092 464/7 1342 PC **A02**/MF **A01**

WHOI-80-64

Reprint: A Projectile Point for Penetrating Whale Blubber.
AD-A092 465/4 1340 PC **A02**/MF **A01**

WHOI-80-65

Reprint: The Physical Structure and Life History of Cyclonic Gulf Stream Ring Allen.
AD-A092 483/7 1342 PC **A02**/MF **A01**

WSRL-0166-TR

Initial Results in Developing Free Flight Testing Techniques for Artillery Shells.
PB81-120206 1433 PC **A03**/MF **A01**

WSRL-0172-TR

Results from Trials of a New Yawsonde Design.
PB81-120222 1434 PC **A02**/MF **A01**

MAIL ORDER TO:

NTIS

National Technical Information Service
U.S. DEPARTMENT OF COMMERCE
Springfield, Va. 22161
(703) 487-4650 TELEX 89-9405

ORDER FORM

For DTIC Users Only

DTIC User Code _____

Contract Number _____
(last 6 characters only)

Treasury Agency Location Code
For Government Users
(who report on SF-224)
(8 digit)

☐☐ ☐☐ ☐☐☐☐

PURCHASER:
Telephone: _____

Attention: _____

Name _____

Organization _____

Address _____

City, State, ZIP _____

SHIP TO:
(Enter if different from address at left)

Date _____

Name _____

Organization _____

Address _____

City, State, ZIP _____

Method of Payment

- ☐ Charge my NTIS deposit account no. _____
- ☐ Purchase order no. _____
- ☐ Check enclosed for $ _____
- ☐ Ship & Bill. See reverse (not applicable outside North America).
- ☐ Charge to my ☐ American Express ☐ Visa ☐ Master Card.

Account no. _____
Card expiration date _____
Signature _____
(Required to validate order)

ORDER OPTIONS

It is vital that you order by NTIS order number or your order will be manually filled, causing a delay. You can opt for *airmail/first class delivery* as indicated below. Just check the *Priority Mail Services* box. If you're really pressed for time, call the NTIS Rush Handling Service (703) 487-4700 or (800) 336-4700. For a $10 per copy charge your order will be mailed within 8 working hours. Or, you can pick up your order in the Washington Information Center & Bookstore or at our Springfield Operations Center within 24 hours for a $6 per copy charge.

NTIS ORDER NUMBER***	USER ROUTING CODE (see reverse)	QUANTITY			UNIT** PRICE	PRIORITY* MAIL SERVICES	TOTAL PRICE
		Paper Copy	Micro-fiche	Other (specify)			

*Add $3 per item for First Class Delivery in North America;
Add $4 for each paper copy Airmail Delivery outside North America.
**ALL PRICES SUBJECT TO CHANGE.
***If ordering by title or if item ordered is a magnetic tape, please see reverse side.

Enter Grand Total $

NTIS-173 (3/80)

USER ROUTING CODE: NTIS can label each item for routing within your organization. If you want this service put your routing code in the box marked USER ROUTING CODE (Limit eight characters).

SHIP & BILL SERVICE: Prepayment helps to expedite your order and can be accomplished through the use of an NTIS Deposit Account, check, money order, or charge card account number • For "Ship and Bill," NTIS charges $5 extra for *each order* (regardless of the number of items; $5 extra for *each* NTISearch; • NTIS does not "Ship and Bill" for orders outside North America.

ORDERING MAGNETIC TAPE: (check model)

☐ 7 track ☐ 800 BPI ☐ odd parity ☐ 556 BPI ☐ even parity

☐ 9 track ☐ 1600 BPI (odd parity) ☐ 800 BPI

ORDERING BY TITLE: If ordering without an NTIS order number (by title only) allow an additional two weeks.

TITLE #1

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "1" in the NTIS Order Number block and complete the rest of the line.		

TITLE #2

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "2" in the NTIS Order Number block and complete the rest of the line.		

TITLE #3

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "3" in the NTIS Order Number block and complete the rest of the line.		

TITLE #4

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "4" in the NTIS Order Number block and complete the rest of the line.		

TITLE #5

Sponsor's Series #	Contract or Grant Number of Report	Date Published
Originator (Give specific laboratory, or division and location.)		Personal Author
Turn to other side. Write "5" in the NTIS Order Number block and complete the rest of the line.		

Foreign NTIS Representatives

NTIS is represented in many countries around the world by local organizations. These representatives ensure NTIS clients in those countries of fast and efficient service when transacting business with NTIS. They offer the convenience of accepting payment in local currencies and any order-related problem can also be resolved by them. These representatives may also serve as an additional channel for non-U.S. information acquisitions.

NTIS clients in the countries listed below should direct all orders and inquiries to these representatives.

BARBADOS
Caribbean Development Bank (CDB)
Technology Information Unit
Project Design & Analysis Div.
ATTN: Dr. Jeffrey Dellimore
P.O. Box 408
Wildey, St. Michael
Barbados, W.I.
PHONE: 809-427-8100
TELEX: WB 287
CABLE: CARIBANK

BOLIVIA
Direccion General de Normas y Tecnologia (DGNT)
ATTN: Ing. Carlos Garvizu T.
Jefe, Servicio de Informacion Tecnica Industrial
Casilla 4430
La Paz,
PHONE: 37-20-47

BRAZIL
Barroslearn
ATTN: Jose Peres
Rue 24 de Maio, 62-Andar 5
01041 Sao Paulo, S.P.
PHONE: (55) 223-6011
TELEX: 01131770 PBAS BR
CABLE: ENGEBARO

CHILE
Instituto de Investigaciones Tecnologicas (INTEC/CHILE)
ATTN: Srta. Margarita Barraza C.
Jefa de Adquisiciones
Casilla 667
Avenida Santa Maria 06500
(Lo Curro)
Santiago
PHONE: (56) 289-066
TELEX: 40421 CORFO CL

COLOMBIA
Fondo Colombiano de Investigaciones Cientificas (COLCIENCIAS)
ATTN: Sra. Isabel Forero de Moreno
Jefa, Division Biblioteca y Documentacion
Transversal 9, No. 133-28
Apartado aereo 051 580-29828
Bogota, D.E.
PHONE: 274-19-17

COSTA RICA
Instituto Tecnologico de Costa Rica (ITCR)
ATTN: Ing. Gerardo Mirabelli
Director, Centro de Informacion Tecnologica
Apartado 159
Cartago
PHONE: 51-11-22

DOMINICAN REPUBLIC
Instituto Dominicano de Tecnologia Industrial (INDOTEC)
ATTN: Sr. Enrique Leyba D., Sub-Director
Av. Nunez de Caceres
Esquina Jose Amado Soler
Apartado 329-2
Santo-Domingo
PHONE: 566-8121 thru 29
TELEX: ITT 3460052

ECUADOR
Centro de Desarrollo Industrial del Ecuador (CENDES)
ATTN: Ing. Abdon Calderon
Jefe, Servicio de Informacion Tecnica
Garcia Aviles 217 y 9 de Octubre
Apartado 5833
Guayaquil
PHONE: (593) 308500
TELEX: 3603 Cendes ED
CABLE: CENDES

ECUADOR SUB-AGENCY
Escuela Politecnica Nacional
Instituto de Investigaciones Tecnologicas
ATTN: Ing. Elman Lopez
Apartado 2759
Quito
PHONE: 541 794
CABLE: EPN

EL SALVADOR
Centro Nacional de Productividad (CENAP)
ATTN: Srta. Alicia Goria
Servicio de Informacion y Transferencia de Tecnologia
Avenida Espana 732
San Salvador
PHONE: (503) 22-30-64
TELEX: 30194

FRANCE
MIKROS Enterprises
9, Rue du Dome
92100 Boulogne
PHONE: 620.57.22
TELEX: MIKROS 203606 F

GABON
Centre National de la Recherche Scientifique et Technologique (CENAREST)
ATTN: Jean-Noel Gassita Commissaire General
B.P. 842
Libreville

GUATEMALA
Instituto Tecnico de Capacitacion (INTECAP)
ATTN: Ing. Gustavo Chang
Apartado 709
Guatemala City
PHONE: (502) 60631

GUATEMALA
Instituto Centroamericano de Investigacion y Tecnologia Industrial (ICAITI)
ATTN: Sra. Rocio Marban
Documentacion y Informacion Dept.
Apartado Postal 1552
Guatemala City
PHONE: (502) 310631/5
TELEX: 5312 ICAITI-GU
CABLE: ICAITI

HAITI
Bureau National de Technologie
ATTN: Reynauld Desrouleaux
Avenue Panamericaine
No. 14, Apt. 9 et 10
Petion - Ville
PHONE: 70972

HONDURAS
Universidad Nacional Autonoma de Honduras
Centro de Informacion Industrial (CII)
ATTN: Mrs. Patricia Duron
Tegucigalpa
PHONE: 32-22-08

INDIA
Higginbotham's Ltd.
ATTN: Mr. V. Balaraman
Director and Manager
165 Anna Salai
Madras 600002
TELEX: 86556
CABLE: BOOK LOVER

Constellate Consultants (P) Ltd.
ATTN: Mr. Vijay Bhargava
5 Anand Lok
New Delhi 110049
PHONE: 669568
TELEX: care of 031-2566

Allied Publishers, Pvt., Ltd.
ATTN: S.M. Sachdev, Director
15 Graham Road
Ballard Estate
Bombay 400038

INDONESIA
Pusat Dokumentasi Ilmiah Nasional (PDIN)
ATTN: Mr. Hernandono
Jl. Jenderal Gatot Subroto
P.O. Box 3065/Jkt
Jakarta
PHONE: 583-467
TELEX: 45875
CABLE: PDIN

ITALY
SITI WORLDTECH
ATTN: Mario M. Fortini General Manager
Via del Serafico, 200
Rome
TELEX: 613667

JAMAICA
Scientific Research Council
ATTN: Miss. Marline Smith
Technical Information Officer
P.O. Box 350
Kingston 6
Jamaica, W.I.
PHONE: (92) 7-9931-3
CABLE: SCIENTIST

JAPAN
Mitsubishi Research Institute Inc. (MRI)
Time & Life Building
3-6 Otemachi 2-chome
Chiyoda-ku, Tokyo 100
PHONE: 03-214-1331
TELEX: 781-22222-87

KENYA
Technical Consultants International
ATTN: Wanjiru Kamau
Atlas House, Haile Selassie Ave.
P.O. Box 51553
Nairobi
PHONE: 28195
TELEX: 22322

KOREA
Korean Scientific & Technological Information Center (KORSTIC)
ATTN: Mr. Koo-Ho Yoon
Director, Dept. of Information Resources
C.P.O. Box 1229
Seoul
PHONE: (82) 965211
CABLE: KORSTIC

MEXICO
INFOTEC/CONACYT
ATTN: Sr. Jorge Cepeda
Coordinador de Servicio
Division NTIS
Apartado 19-194
Mexico 19, D.F.
PHONE: (905) 559-52-11, 559-54-46
TELEX: 001 777 569 INFOME

NEPAL
Research Centre for Applied Science and Technology (RECAST)
National Council for Science and Technology
ATTN: D.B. Shakya
Tribhuvan University
Kathmandu

THE NETHERLANDS
Intermediair
ATTN: Wim Poelman
Keizersgracht 391, 1016 EJ
Postbus 3434, 1001AE
Amsterdam
PHONE: 020-22 80 22
TELEX: 14509 Inmed nl

NICARAGUA
Centro Nicaraguense de Informacion Tecnologica (CENIT)
Banco Central de Nicaragua
ATTN: Ing. Francisco Vega, Director
Apartado 2252, Banco Central
Managua
PHONE: 27751/5 - 27851/5
TELEX: 1056

NIGERIA
Federal Institute of Industrial Research (FIIR) Oshodi
ATTN: Mrs. B. Ariyo
Office of the Director of Research
Private Mail Bag 1023
Murtala Muhammed Airport
Lagos State
PHONE: 32161-4

PAKISTAN
Pakistan Scientific and Technological Information Center (PASTIC)
ATTN: Miss Shamin Farrukh, Translating Officer
Sub-Centre
142-C/II P.E.C.H.S.
Karachi-29
PHONE: 413412, 413041

Pakistan Scientific and Technological Information Center (PASTIC)
ATTN: Dr. A.R. Mohajir
13-P, Almarkaz, F-7/2
P.O. Box 1217
Islamabad
PHONE: 24161
CABLE: PASTIC

PANAMA
Centro para el Desarrollo de la Capacidad Nacional en la Investigacion (CEDECANI)
ATTN: Mrs. Nitzia Barrantes, Librarian
Estafeta Universitaria
Universidad de Panama
Panama City
PHONE: 23-99-85

PARAGUAY
Instituto Nacional de Tecnologia y Normalizacion (INTN)
Avenida General Artigas y General Roa
ATTN: Dr. Jose Marino
Casilla de Correo 967
Asuncion
PHONE: 270-160, 270-266
TELEX: 306 PY INTN
CABLE: INTN

PERU
Novoa Ingenieros S.A.
Division NTIS
Los Colibries 104
ATTN: Ing. Alfredo Novoa
Lima 27,
PHONE: (51) 14 402445-405910

PHILIPPINES
Technology Resource Center (TRC)
ATTN: Jesus Fragante
TRC Building
Buendia Avenue Extension
Makati, Metro Manila
PHONE: (63) 859811 to 26
TELEX: 4002 TRC PN
CABLE: TECHCENTER

SRI LANKA
National Science Council of Sri Lanka
Sri Lanka Scientific and Technical Information Center (SLSTIC)
ATTN: Mr. N.U. Yapa, Head Librarian
47/5 Maitland Place
Colombo 7
CABLE: LAKSCIENCE

SUDAN
The National Council for Research
ATTN: Dr. Abubakr Mustafa
P.O. Box 2404
Khartoum, SUDAN

THAILAND
Thailand Management Association (TMA)
308 Silom Road
Bangkok 5
PHONE: (66) 234-2624

TUNISIA
Centre National de l'Informatique (CNI)
ATTN: Ferida Gribaa
Training Officer
6, Rue Belhassen Ben Chaabane
Tunis
PHONE: 285260
TELEX: CENINFTN 13904

UNITED KINGDOM/REPUBLIC OF IRELAND
Microinfo, Ltd.
P.O. Box 3
Newman Lane
Alton, Hampshire GU 34 2PG
England
PHONE: Alton 84300 (44)
TELEX: 851-858-431

VENEZUELA
Red de Informacion de Ingenieria, Arquitectura y Afines
ATTN: Econ. Francisco Rizo
NTIS/REDINARA
Apartado de Correos 2006
PHONE: 571-3122
TEXEX: 21470 CIV FJMC
CABLE: COINVE

NTIS SUBJECT CATEGORIES

COSATI Subject Fields

1 **AERONAUTICS**
KEYWORD INDEX

2 **AGRICULTURE**
PERSONAL AUTHOR INDEX

3 **ASTRONOMY AND ASTROPHYSICS**
CORPORATE AUTHOR INDEX

4 **ATMOSPHERIC SCIENCES**
CONTRACT/GRANT NUMBER INDEX

5 **BEHAVIORAL AND SOCIAL SCIENCES** ● NTIS ORDER/REPORT NUMBER INDEX

6 **BIOLOGICAL AND MEDICAL SCIENCES**

7 **CHEMISTRY**

8 **EARTH SCIENCES AND OCEANOGRAPHY**

9 **ELECTRONICS AND ELECTRICAL ENGINEERING**

10 **ENERGY CONVERSION (NON-PROPULSIVE)**

11 **MATERIALS**

12 **MATHEMATICAL SCIENCES**

13 **MECHANICAL, INDUSTRIAL, CIVIL, AND MARINE ENGINEERING**

14 **METHODS AND EQUIPMENT**

15 **MILITARY SCIENCES**

16 **MISSILE TECHNOLOGY**

17 **NAVIGATION, COMMUNICATIONS, DETECTION, AND COUNTERMEASURES**

18 **NUCLEAR SCIENCE AND TECHNOLOGY**

19 **ORDNANCE**

20 **PHYSICS**

21 **PROPULSION AND FUELS**

22 **SPACE TECHNOLOGY**

NORTH AMERICAN CONTINENT PRICE SCHEDULE

Customers in Canada, U.S., and Mexico please use this price schedule; other addressees write for Folder PR-360-4.

A01	$3.50	E01	$5.50	T01	$110.00
A02	5.00	E02	6.50	T02	125.00
A03	6.50	E03	8.50	T03	210.00
A04	8.00	E04	10.50	T04	300.00
A05	9.50	E05	12.50	T05	360.00
A06	11.00	E06	14.50	T06	420.00
A07	12.50	E07	16.50	T07	480.00
A08	14.00	E08	18.50	T08	540.00
A09	15.50	E09	20.50	T09	600.00
A10	17.00	E10	22.50	T10	660.00
A11	18.50	E11	24.50	T11	720.00
A12	20.00	E12	27.50	T12	780.00
A13	21.50	E13	30.50	T13	840.00
A14	23.00	E14	33.50	T14	900.00
A15	24.50	E15	36.50	T15	960.00
A16	26.00	E16	39.50	T16	1,020.00
A17	27.50	E17	42.50	T17	1,080.00
A18	29.00	E18	45.50	T18	1,140.00
A19	30.50	E19	50.50	T19	1,200.00
A20	32.00	E20	60.50	T99	*
A21	33.50	E99	*		
A22	35.00				
A23	36.50	N01	30.00		
A24	38.00	N02	50.00		
A25	39.50				
A99	*				

*Contact NTIS for price quote

PRICES EFFECTIVE JANUARY 1, 1981

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

OFFICIAL BUSINESS

PRINTED MATTER

AN EQUAL OPPORTUNITY EMPLOYER

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM 211

Special Fourth-Class Rate
Book

GRA
UNIV MICROFILMS INTERNATL X81103 1
SERIALS PROCESSING 001
300 ZEEB ROAD
ANN ARBOR MI 48106